BOSS POCKET DICTIONARY

a sound innovator

BOSS

Vol. 2

A SOUND INNOVATOR—BOSS

The Boss theme of product developme nt involves creating new and innovative products— products that are completel y different from those currently available. We at Boss want you to create a new a nd exciting music scene through the use of Boss' compact effect pedals. Because we believe that they can make a difference.

Contents

NF-1 • Noise Gate 1
CS-2 • Compression Sustainer 3
GE-7 • Equalizer 5
DS-1 • Distortion 7
OD-1 • Over Drive 9
SD-1 • Super Over Drive 11
HM-2 • Heavy Metal 13
DF-2 • Super Feedbacker & Distortion 15
PH-1R • Phaser 17
PH-2 • Super Phaser 19
BF-2 • Flanger 21
TW-1 • T Wah 23
OC-2 • Octave 25
VB-2 • Vibrato 27
CE-3 • Chorus 29
DM-3 • Delay 31
DD-2 • Digital Delay 33
DSD-2 • Digital Sampler/Delay 35
Micro Studio Series 37
RDD-10 • Digital Delay 40
RBF-10 • Flanger 41
RPH-10 • Phaser 42
RCL-10 • Compressor/Limiter 43
RGE-10 • Graphic Equalizer 44
DE-200 • Digital Delay 45
CE-300 • Super Chorus 47
PW-1 • Rocker Wah 49
PV-1 • Rocker Volume 50
FV-60 • Volume Pedal 51
FV-200 • Keyboard Volume 52
FV-100 • Guitar Volume 52
Try These Exciting Sound 53
BCB-6 • Carrying Box 57
PSM-5 • Power Supply & Master Switch 58
Boss Effect Pedals for Every Instrument 59
Guide to Using Boss Effect Pedals with Keyboards 61
HA-5 • Headphone Amp 63
TU-12 • Chromatic Tuner 65
TU-12H • Chromatic Tuner 67
DR-110 • Dr. Rhythm 68
DB-66 • Dr. Beat 69
DB-33 • Dr. Beat 70
GE-10 • Graphic Equalizer 70
MS-100A • Monitor Speaker 71
MA-15A • Micro Monitor 72
BX-800 • 8 Channel Stereo Mixer 73
BX-600 • 6 Channel Stereo Mixer 74
BX-400 • 4 Channel Mixer 75
KM-04 • Micro Mixer 76
KM-2 • Mixing Amplifier 76
HC-2 • Hand Clapper 77
PC-2 • Percussion Synthesizer 77
DI-1 • Direct Box 78
J-5 • Multiple Jack 79
J-44 • Multiple Jack 79

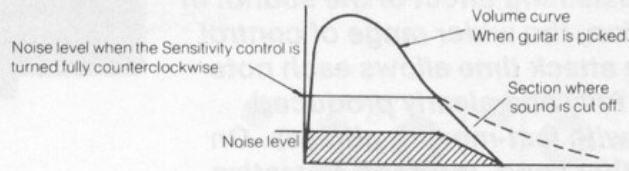
NF-1 *Noise Gate*

The NF-1 Noise Gate cuts the annoying noise and hum that can be generated when pausing during a performance. The NF-1 is equipped with a Sensitivity control for adjusting the gating threshold in accordance to the ratio of noise to signal. A Decay control is also included for setting the length of decay for each note before the gate cuts in, while a wide 100msec to 1.6 second decay time control range allows the NF-1 to be used with virtually any musical instrument from guitars to keyboards. Ideal for eliminating the internal noise generated by musical instruments and other electrical or electronic equipments and the hum picked up by wires, the NF-1 can also be effectively used to shut out external noise from lighting fixtures, etc.

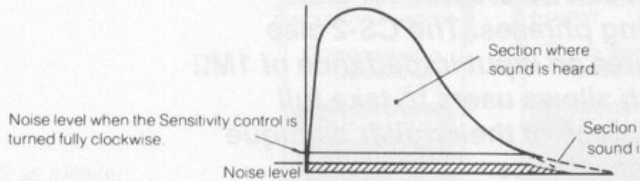
for GUITAR for BASS for KEYBOARD

Using the NF-1

- *Usually, when several effect pedals are connected in a series, the NF-1 Noise Gate should be connected last.*
- *When a volume pedal is used, however, connect the NF-1 before connecting the volume pedal in order to prevent the delayed sound from breaking off and to prevent decaying of the sound.*
- *Proper adjustment of the Decay control allows you to match any instrument's envelope and create a natural sounding decay effect. The sensitivity control eliminates the problem of the noise gate cutting into the decaying signal, thus preventing an abrupt or percussive ending to the sound. The following diagram should help you to use the NF-1 more efficiently.*



***When the noise level is high.**



***When the noise level is low.**

SPECIFICATIONS

Power: 9V Battery, AC Adaptor (ACA Adaptor) • Current draw: DC 9V, 3.9mA • Max. output: +9dBm • Gain: Unity • Input impedance: 470kΩ • Output load impedance: Over 10kΩ • Attack time: 1ms • Release time: 100ms-1.6 sec. (variable) • Gating threshold: −65 to −35dBm (variable) • Dimensions: 70(W)×55(H)×125(D) mm (2.8″×2.2″×4.9″) • Weight: 400 g (0.88 lbs.)

COMPRESSION SUNSTAINER

CS-2 *Compression Sustainer*

The CS-2 Compression Sustainer suppresses a higher volume input signal while emphasizing a lower volume input signal in order to create a sustain effect that holds a note for a long time. The CS-2 performs compression and expansion at high speeds, depending on the input signal, which permits a faster response to any input and thus eliminates the volume reduction that normally occurs during the attack, as well as the weakening and instability of the sound. This, in turn, improves the sustaining effect of the sound. In addition, the wider range of control of the attack time allows each note to be fully and clearly produced, even with fast-moving phrases. On the other hand, long and attractive tones can be created for slow-moving phrases. The CS-2 also features an input impedance of 1MΩ which allows users to take full advantage of their guitar's unique characteristics.

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Using the CS-2

- *With its wide, adjustable attack time range, the CS-2 can add a driving effect to a fast-moving phrase, or create a flowing melody line using the unit's sustain characteristics for slow-moving phrases.*
- *The wide sustain control range allows the CS-2 to also be used as a limiter, and is thus an essential effect pedal for rhythm and bass guitars.*
- *Usually, when a series of effect pedals are connected, the CS-2 should be connected first. However, when using the CS-2 as a limiter, it should be connected last in the series.*
- *Fig.1 shows the setting used to produce sustain effects when the CS-2 is used as a limiter.*
- *Fig.2 shows the setting used when the CS-2 is used as a compressor. Turning the Sustain control too high may cause noise or howling.*
- *By adding a compressor, a sophisticated sound can be created. This sound can be further enhanced by adding a chorus effect pedal.*

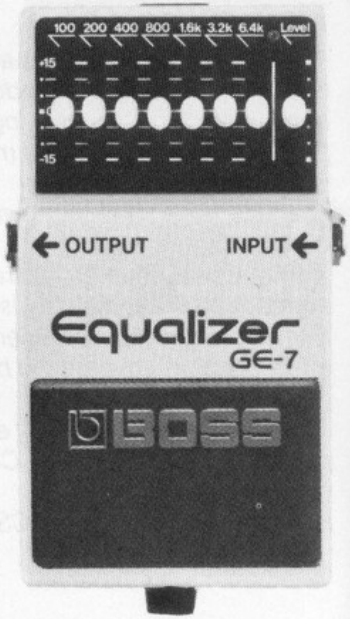
1. Using the CS-2 as a limiter.
2. Using the CS-2 as a compressor.

SPECIFICATIONS

Power: 9V Battery, AC Adaptor (ACA Adaptor) • Current draw: DC 9V, 4mA
• Equivalent input noise: – 110dBm (IHF-A) • Maximum input: – 10dBm (1kHz)
• Maximum output: – 10dBm • Compression range: 38dB • Input impedance: 1MΩ
• Dimensions: 70(W)×55(H)×125(D) mm (2.8″×2.2″×4.9″) • Weight: 400 g (0.88 lbs.)

GE-7 Equalizer

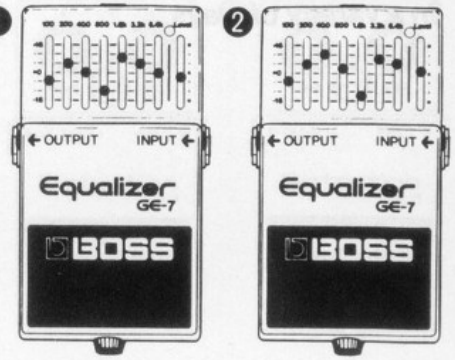
The GE-7 Equalizer effect pedal lets you create any desired tone by simply boosting or cutting a particular frequency or frequency range. Noise and howling can also be easily eliminated with a few simple adjustments. The GE-7 features 7 separate bands ranging from 100Hz all the way up to 6.4kHz, with cut and boost by up to ± 15dB per band. The seven octave bands are especially useful for cutting out annoying noise in the high-frequency range, and in emphasizing the sharp, high tones of harmonic overtones. And unlike conventional pedal equalizers, the GE-7 incorporates separate amplifiers for both the frequency band control and the sound-effect allowing you to adjust the level control without changing the present equalizing characteristics.



Using the GE-7

- *By allowing you to perform boosts and cuts in the ultra-high frequency range of 6.4kHz, the GE-7 can be used for a wide range of applications, from creating delicate tones to effectively eliminating noise.*
- *By using the GE-7 with another effect pedal such as an overdrive or phaser, you can quickly and easily add your own sound preferences to an overdrive tone, or further enhance the sound of a phaser unit.*

1. The GE-7 Equalizer is very effective for creating a wide range of unique sounds. For example, when the overdrive unit is used with a guitar that has single-coil type pickups, a thin sound is produced. To solve this problem, connect the GE-7 and use it to boost the low and medium frequency bands until a fat, rich sound is produced (Fig.1).
On the other hand, for guitars with hum-bucking type pickups, the lower bands should be slightly suppressed.
2. Fig.2 shows the setting used to prevent howling (feedback). The key to effectively using this setting is to sharply cut only that frequency which contains the howling in order to avoid changing the tone of the overall sound.



1. Setting for creating a fat, rich sound
2. One-point cut to prevent howling

SPECIFICATIONS

Power: 9V Battery, AC Adaptor (ACA Adaptor) • Current draw: DC 9V, 7mA • Frequency centers: 100Hz, 200Hz, 400Hz, 800Hz, 1.6kHz, 3.2kHz, 6.4kHz • Control range: ± 15dB • Residual noise – 100dBm (IHF-A) • Input impedance: 470kΩ • Output load impedance: Over 10kΩ • Dimensions: 70(W)×55(H)×125(D) mm (2.8″×2.2″×4.9″) • Weight: 450 g (0.99 lbs.)

DS-1 *Distortion*

The DS-1 Distortion unit electrically clips the waveform of the original sound in order to produce the same distortion and sustain effects as a fully-driven amplifier. All of the nuances of guitar picking can also be correctly produced, rather than the toneless, fuzzy distortion that is created by other distortion units. A built-in Distortion control lets you adjust the degree of distortion so that you can freely create both soft and hard distortion effects. Specially-designed tone control circuitry, that always maintains the perfect balance between the high and low tones, lets you enhance your distortion effects in a variety of ways.

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Using the DS-1

- *When using the DS-1 with a chorus effect device, we recommend connecting the chorus effect device after the DS-1.*
- *Gradually turning the Tone control clockwise emphasizes the high-frequency band, creating sharp distortion effects. When doing this, however, be sure to adjust the volume settings on the amp and guitar in order to prevent them from being excessively driven.*
- *Fig.1 shows the setting used to create a soft, mellow distortion sound. When using this setting, the front pickup should be used.*
- *Fig.2 shows the setting used to create a slightly harder distortion sound. When using this setting, the rear pickup should be used.*

1. Soft distortion setting
2. Hard distortion setting

SPECIFICATIONS

Power: 9V Battery, AC Adaptor (ACA Adaptor) • Current draw: DC 9V, 4mA • Input impedance: 470kΩ • Output load impedance: Over 10kΩ • Dimensions: 70(W)×55(H)×125(D) mm (2.8″×2.2″×4.9″) • Weight: 400 g (0.88 lbs.)

OD-1 *Over Drive*

The OD-1 Over Drive creates the mild, natural distortion effect of an overdriven tube amplifier without fundamentally altering the tonal characteristics of the guitar itself. Unlike hard-distortion effect pedals, the OD-1 allows the delicate nuances of picking and fingering to be faithfully and fully reproduced without disturbing the balance of the overall ensemble sound. Incorporating the Boss' unique asymmetric overdrive circuitry, the OD-1 produces an impressive effect without ruining guitar's natural harmonic overtones. Because of its clear sound, the OD-1 has become highly renowned among both professional and amateur musicians as the world standard for overdrive units.

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Using the OD-1

- *The OD-1 produces a mild, mellow distortion effect that is ideal for performances that emphasize delicate picking and fingering nuances.*
- *The OD-1 can produce distortion effects while maintaining the original tone, thus producing an impressive, soothing effect in any setting.*
- *The OD-1 is also effective for creating rich, guitar-like nuances and drive effects on keyboards, especially synthesizers.*
- *Fig.1 shows the setting used to create a conventional overdrive effect.*
- *Fig.2 shows the setting used to create a warm and light distortion effect. This effect is produced by setting the Overdrive control at a slightly lower level and overdriving the amplifier.*

1. Setting for a conventional overdrive sound.
2. Setting for a warm overdrive sound using the distortion of the amplifier.

SPECIFICATIONS

Power: 9V Battery, AC Adaptor (ACA Adaptor) • Current draw: DC 9V, 3.5mA • SN ratio: 80dB • Input impedance: 470kΩ • Output load impedance: Over 10kΩ • Dimensions: 70(W)×55(H)×125(D) mm (2.8″×2.2″×4.9″) • Weight: 400 g (0.88 lbs.)

SUPER OVER DRIVE

SD-1 *Super Over Drive*

By using to the fullest extent the characteristics of the guitar, the SD-1 Super Over Drive can produce the mellow and mild sounds of a fully-driven tube amplifier without changing the original tonal characteristics. The SD-1 is ideal for increasing the richness of a guitar's sound without losing the subtle nuances of the guitar player's picking and fingering. The SD-1 uses the same basic circuitry as the best-selling OD-1 Over Drive—the world's standard overdrive effect pedal—to produce exciting overdrive sounds without ruining the guitar's original harmonic overtones . The SD-1 is equipped with a Tone control which permits any desired boost or cut in the high-frequency band in order to produce more varied overdrive effects.

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Using the SD-1

- *Adjusting the Tone control allows you to create a wide variety of sounds, ranging from the DS-1's distortion sounds to the OD-1's overdrive sounds.*
- *Careful use of the Tone control lets you add attractive overdrive effects to various guitar and amplifier combinations without having to worry about whether they match a particular instrument.*
- *In order to produce an over-drive sound, care should be taken not to turn the Tone control fully clockwise.*
- *If a band in the high-frequency range is boosted too much, it will produce large amounts of distortion when the Drive control is adjusted to higher levels. It is recommended that the Tone control be set at around 90° (clockwise).*
- *Fig. 1 shows the setting used to create a soft distortion effect with all the picking nuances.*
- *Fig. 2 shows the setting used to create a hard distortion effect. This effect was created by setting the Tone and Drive controls at very high levels.*

1. Setting for creating a soft distortion effect.
2. Setting for creating a hard distortion effect.

SPECIFICATIONS

Power: 9V Battery, AC Adaptor (ACA Adaptor) • Current draw: DC 9V, 4mA • SN ratio: 80dB • Input impedance: 470kΩ • Output load impedance: Over 10kΩ • Dimensions: 70(W)×55(H)×125(D) mm (2.8″×2.2″×4.9″) • Weight: 400 g (0.88 lbs.)

HM-2 *Heavy Metal*

The HM-2 Heavy Metal effect pedal is a state-of-the-art distortion unit that creates full-bodied distortion sounds while maintaining the nuances of the original tone rather than simply producing excessive distortion. Incorporating a newly-designed hard distortion circuit and an improved version of the OD-1 Over Drive effect pedal's renowned asymmetric over-drive circuitry, the HM-2 features a surprisingly wide dynamic range. Unlike conventional distortion units, the HM-2 does not cause the sound to thin out along with the distortion. The HM-2 also boasts a significantly longer sustain effect than conventional units. Moreover, the HM-2 is equipped with 2 separate tone controls—Color Mix L and Color Mix H—thus allowing the user to create a wide variety of distortion effects as well as the dynamic heavy-metal sound of large amplifiers regardless of what amplifier the HM-2 is used with.

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Using the HM-2

- *The HM-2 is a completely new distortion effect pedal that is radically different from conventional distortion and fuzz units.*
- *By effectively adjusting the 2 separate tone controls—Color Mix L and Color Mix H—the user can create a wide variety of heavy-metal effects.*
- *The Color Mix H tone control incorporates a variety of innovative circuits that allow the user to create the sounds appropriate for heavy-metal music.*
- *Even when using a low-output amplifier, the dynamic distortion sound of a large-size amp can be created.*
- *Fig.1 shows the setting used to create heavy distortion that emphasizes the low frequency range. This setting is ideal for lead guitars that feature picking harmonics or heavy riffs.*
- *Fig.2 shows the setting used to create a metallic sound that is effective for the feedback (rendition) or tricky arm-playing.*

1. Setting used to create the heavy-metal sound.
2. Setting used to create a metallic sound.

SPECIFICATIONS

Power: 9V Battery, AC Adaptor (ACA Adaptor) • Current draw: DC 9V, 10mA • Input impedance: 1MΩ • Output load impedance: Over 10kΩ • Dimensions: 70(W)×55(H)×125(D) mm (2.8″×2.2″×4.9″) • Weight: 400 g (0.88 lbs.)

DF-2 *Super Feedbacker and Distortion*

Feedback effects that bring to mind stacks of huge amplifiers can now be enjoyed with any size amplifier with the DF-2 that contains hard distortion circuitry for creating dynamic effects. Just as importantly, the DF-2 lets you perfect innovative fingering techniques to produce feedback sounds. This is something many guitarists have long wished for and now it is a reality. Just depress the pedal: Feedback sounds are sustained for as long as the pedal stays down, and the sound is clearly natural, with all the harmonic overtones. The newly-developed 2-mode Pedal switch permits selecting as desired between the normal effect, distortion effect and feedback. For rock musicians, this new effect pedal is a radical innovation, since it lets musicians express musical ideas in a completely new way.

for GUITAR for BASS for KEYBOARD

Using the DF-2

- *To change the function mode from Normal, Distortion and Feedback, simply depress the pedal.*
- *The Distortion effect is switched on and off by short-stroke depressing of the pedal.*
- *Pressing the pedal down further engages the Feedbacker function and the sound lasts as long as the pedal is depressed.*
- *With the DF-2, feedback effects are easily achieved even with headphone amplifiers, without all the problems of selecting the right type of amplifier or the right settings.*

A built-in Overtone control allows the mixing of overtone components into the sound to produce natural-sounding feedback.

1. Setting used to create the heavy-metal sound.
2. Distortion setting for backing melody.

SPECIFICATIONS

Power: 9V battery, AC adapter (BOSS ACA series) • Current draw: 9V DC, 10mA • Controls: Distortion, Tone, Level, Over Tone • Others: 2-mode (Effect on/off and Feedback) foot switch LED on/off and battery condition indicator • Jacks: Input, Output, AC adapter • Input impedance: 1MΩ • Output load impedance: Over 10kΩ • Dimensions: 70(W) × 55(H) × 125(D)mm ($2^{3}/_{4}$" × $2^{3}/_{16}$" × $4^{15}/_{16}$") • Weight: 450 g

PH-1R Phaser

The PH-1R has all of the features of the clean, low noise PH-1 plus a Resonance control for added depth of phase.
A Rate control provides more sweep speed variance than any other phase shifter now available—from 100msec to 16 seconds—while the Depth control, permits notch depth adjustment, adjusts the phasing intensity and tailors the PH-1R to whatever instrument is being used, resulting in more precise control over virtually any creative application.
A deeper-sounding phase effect can be achieved by rerouting the previously phased signal back through the circuit by means of the Resonance control. This control is adjustable over a wide range in order to permit maximum creative control.

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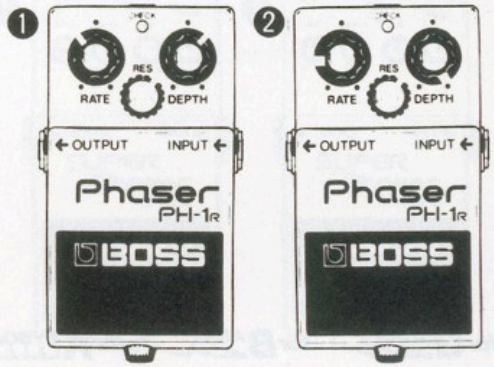
Using the PH-1R

- *The PH-1R is effective for playing soft, melodic solo phrases.*
- *The PH-1R can also be used to play a legato backing in shallow phase or to play arpeggio in deep phase.*
- *By combining the PH-1R with the DS-1 Distortion unit, an aggressive machine-like sound can be produced.*
- *When adding rotary speaker effects to a keyboard sound, set the Rate control to a higher speed and set both the Depth and Resonance controls at relatively low levels.*
- *Fig.1 shows the setting used to create a normal phaser sound.*
- *Fig.2 shows the setting used to create Lee Ritenour's favorite monotone backing. (Set the Rate control to the lowest speed level and turn the Depth control fully clockwise.)*



1. Normal setting.
2. Setting for creating Lee Ritenour's favorite backing.

SPECIFICATIONS

Power: 9V Battery, AC Adaptor (ACA Adaptor) • Current draw: DC 9V, 11mA
• Phase Shift: 4 Stages 720° • LFO speed: 100mS to 16 Sec. • SN ratio: Over 90dB
• Maximum input: – 5dBm • Gain: Unity • Dimensions: 70(W)×55(H)×125(D) mm (2.8″×2.2″×4.9″) • Weight: 400 g (0.88 lbs.)

PH-2 *Super Phaser*

The PH-2 Super Phaser enables the player to vary the phase of the original sound and to adjust the phase depth as well as allowing sweep speed variance to an extraordinary degree. The Phase Shift mode control allows 12 stages of adjustment for smoother phase shifting and deeper phase effects. The 2 modes give completely different tonal qualities to suit all guitar, bass guitar and keyboard characteristics and provide phase effects of professional quality.

for GUITAR for BASS for KEYBOARD

SPECIFICATIONS

Power: 9V battery, AC adapter (BOSS ACA series) • Current draw: 9V DC, 20 mA (max.) • Controls: Rate, Depth, Resonance, Mode Select Switch (I/II) • Others: Normal/Effect Foot Switch (silent FET switching), LED Battery Condition Indicator • Jacks: Input, Output, AC adapter • Phase shift: 12 stages (2160°) • LFO speed: 14 sec to 100 ms • Residual noise: – 80dBm or less (IHF-A) • Gain: Unity • Input impedance: 1MΩ • Output load impedance: Over 10kΩ • Dimensions: 70(W) × 55(H) × 125(D)mm ($2^{3}/_{4}$" × $2^{3}/_{16}$" × $4^{15}/_{16}$") • Weight: 410 g (14 oz)

Using the PH-2

- *Mode I gives your sound added depth of phase, ranging from the low frequency bands all the way to the high notes with the 10-stage phase-shifting circuitry. This mode will ensure the maximum effect when chord cutting on your guitar.*
- *Mode II's 12-stage phase-shifting circuitry produces sharp, intense sounds ideally suited for the guitar's muting sounds as well rhythmic clavinet playing and similar styles.*
- *Sweep speed variance ranges from 100ms all the way to 14 sec. are adjusted by the Rate control, while deeper-sounding phase effects are possible with the resonance control engineered to adjust feedback. The Depth controls allows notch depth adjustment to create wide-ranging effects ranging from rotary speaker-like effects to harsh jet sounds.*

1. Setting for creating Lee Ritenour's favorite backing.
2. Reaggae guitar sound setting

BF-2 Flanger

The BF-2 Flanger electronically creates a sound-delay effect and mixes the delayed sound with the original sound to create strong, dynamic sound effects with a wide variation of tones. Since the delay time is infinitely adjustable between 1msec and 13msec, and the LFO speed from 100msec to 16sec, a much richer sound can be produced. Full, dynamic jet sounds and chorus sounds can also be produced by adjusting the 4 controls. In addition, the low-voltage BBD ensures both excellent delay characteristics and highly stable operation even when using a 9V battery. And of course, the entire BF-2 flanger unit features a low-noise design.

Using the BF-2

- *The BF-2 has a wide control range that allows you to create the sound of a jet, as well as chorus and phaser effects. A good sense of sound-effect creativity is therefore very useful to users of the BF-2.*
- *Because the BF-2's unique sound has a stronger treble effect, it offers interesting effects for bass guitars.*
- *The BF-2 can also be effectively used with percussion instruments.*
- *Setting all controls to between 0 and 2 produces effects similar to those of a doubler (double-track).*
- *Fig.1 shows the setting used for jet flanging.*
- *Fig.2 shows the setting used for creating a metallic flanging sound. The key to this sound is to turn the RES control completely up and to turn the Depth control down to 0.*

1. Setting for jet flanging.
2. Setting for metallic flanging.

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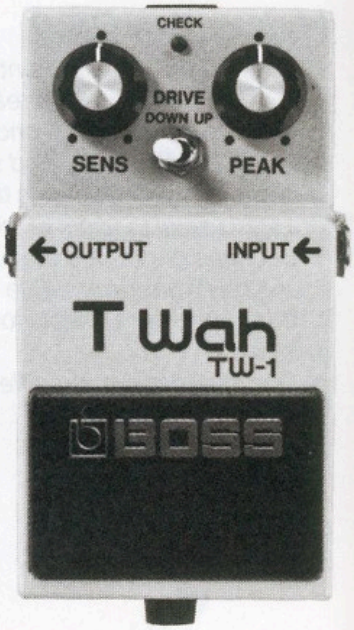
SPECIFICATIONS

Power: 9V Battery, AC Adaptor (ACA Adaptor) • Current draw: DC 9V, 15mA • LFO (rate) speed: 100ms—16 sec. • Residual noise: −95dBm (IHF-A) • Input impedance: 470kΩ • Output load impedance: Over 10kΩ • Dimensions: 70(W)×55(H)×125(D) mm (2.8″×2.2″×4.9″) • Weight: 400 g (0.88 lbs.)

TW-1 *T Wah*

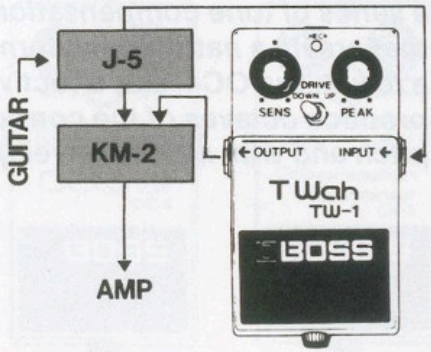
The TW-1 Touch Wah effect pedal produces a wide variety of wah effects by simply adjusting the volume and altering your picking technique. Automatic variations of tone according to the level of the input signal provides radical tone changes for hard picking, and delicate tone changes for soft picking. The TW-1 is therefore ideal for musicians who use sophisticated playing techniques. The use of a unique coil-type resonance circuit makes possible a number of amazingly natural wah effects. The TW-1 is also equipped with a Drive control that lets you choose any of the up (bass to treble) or down (treble to bass) wah effects to match any song you play. As a result, any desired wah effect can be used with any playing technique from hard, quick picking to delicate fingering.



for GUITAR for BASS for KEYBOARD

Using the TW-1

- *The TW-1 allows you to switch between the "up" wah and the "down" wah in order to match the tune being played. When using the down wah during stage performances, set the input signal level from the guitar slightly higher than you would normally. This will produce a much clearer sound.*
- *Effective adjustment of the tone adds an extra touch to the wah effects. Selection of the proper guitar pickup and careful adjustment of the tone knob are the keys to creating superior wah effects with the TW-1.*
- *Ideally, an equalizer should be connected in series after the TW-1 in order to permit slight suppression of the unneeded high-frequency bands.*
- *Interesting effects can be created with the TW-1 while performing chopper bass or rhythm cutting on electric pianos.*
- *Fig. 1 shows the setting used to create a smooth and pleasant wah sound. This wah sound is mixed with the original sound by means of a KM-2 Mixer.*



1. Setting for creating a pleasant wah sound by mixing the original tone with the wah effect.

SPECIFICATIONS

Power: 9V Battery, AC Adaptor (ACA Adaptor) • Current draw: DC 9V, 6mA • SN ratio: Over 80dB • Input impedance: 470kΩ • Output load impedance: Over 10kΩ • Dimensions: 70(W)×55(H)×125(D) mm (2.8″×2.2″×4.9″) • Weight: 400 g (0.88 lbs.)

OC-2 *Octave*

The OC-2 Octave produces 3 separate tones—the original tone, the original tone dropped by one octave, and the original tone dropped by 2 octaves. By mixing these 3 separate tones at any desired level, the user can not only play octaves, but also create a thick wall of sound with a single guitar, thanks to the OC-2's unique 3-octave unison characteristics. The compact OC-2 incorporates state-of-the-art circuitry, including an SAF circuit that correctly samples only the basic waveform of the original tone, plus a high-speed phase inversion amplifier that chooses the correct octave, and a series of tone compensation filters that create a natural waveform. As a result, the OC-2 can effectively produce octaves of the correct pitch and with natural envelopes.

Using the OC-2

- *The key to effective use of the OC-2 Octave lies in properly balancing the volume of the 3 tones—the original tone, and the 1-octave lower and 2-octave lower tones.*
- *The tone that has been dropped by 2 octaves is ideal for adding depth to the original tone. Since the sound is likely to become less clear, however, this lower tone should be carefully balanced with the original tone.*
- *A flanger and a phaser may be used together with the OC-2 in order to make the lower octave tones clearer.*
- *As shown in Fig.1, a compressor can also be added in order to obtain more stable octave tones.*

1. Linking the OC-2 Octave with the CS-2 Compressor in order to obtain more stable octave tones.

SPECIFICATIONS

Power: 9V Battery, AC Adaptor (ACA Adaptor) • Current draw: DC 9V, 4mA • Maximum input level: – 5dBm • Maximum output level 0dBm • Input impedance: 1MΩ • Output load impedance: Over 10kΩ • Minimum operating input level: – 60dBm (at 250Hz) • Equivalent input noise: – 100dBm (IHF-A) • Dimensions: 70(W)×55(H)×125(D) mm (2.8″×2.2″×4.9″) • Weight: 400 g (0.88 lbs.)

VB-2 *Vibrato*

The VB-2 Vibrato is the world's first and only effect pedal that can add a vibrato effect to any electric or electronic musical instrument, including guitars, keyboards and bass guitars. In order to produce a true and natural vibrato effect, the compact VB-2 incorporates state-of-the-art circuitry, including a 1024-stage BBD, plus the same VCA and envelope circuits that are used in synthesizers. When used with a guitar, the VB-2 can produce a wide array of smooth and natural vibrato effects ranging from the vibrato sound produced by conventional fingering techniques, to a unique ultra-slow vibrato and deep, high-speed vibrato sounds. And with the unit's unlatch mode which activates the vibrato effect only while the pedal is pressed, the rise time allows the vibrato effect to come in gradually over a period of time (150msec to 5 seconds) which is variable by means of the Rise Time Control.

Using the VB-2

- *The VB-2 Vibrato effect pedal creates a natural vibrato sound with any type of electronic musical instrument.*
- *The VB-2 is especially ideal for use with electric pianos and guitars without tremolo arms.*
- *The unlatch mode allows the user to create a natural vibrato effect by pressing the pedal at critical sections of a musical piece or after playing a long note.*
- *The trick to effective use of the VB-2 Vibrato effect pedal is to set the Rise Time and Rate controls to the tempo of the music to be played. The vibrato effect is especially effective when applied to critical sections of musical pieces by means of the unlatch mode.*
- *When playing a guitar, a unique vibrato effect can be created that is totally different from that produced by conventional fingering techniques. Use the VB-2 to match the tonal characteristics of the music to be played.*
- *Fig. 1 shows the setting used to create a deep vibrato sound. It is especially effective for long tones.*

1. Setting used to create the appropriate vibrato effect for long tones.
2. The trick to effective use of the VB-2 is careful manipulation of the Rise Time control and the unlatch mode.

for GUITAR for BASS for KEYBOARD

SPECIFICATIONS

Power: 9V Battery, AC Adaptor (ACA Adaptor) • Current draw: DC 9V, 14mA
• Maximum input level: −5dBm (at 1kHz) +2dBm (at 100Hz) • Input impedance: 1MΩ
• Output load impedance: Over 10kΩ • Frequency response: 40Hz to 17kHz (vibrato)
• Delay time: 4ms (Depth 0) • LFO Speed: 2Hz to 15Hz • Rise time: 150ms to 5 sec.
• Dimensions: 70(W)×55(H)×125(D) mm (2.8″ ×2.2″ ×4.9″) • Weight: 450 g (0.99 lbs.)

CE-3 Chorus

The CE-3 Chorus electronically creates fine deviations in pitch which can be overlaid onto the original sound to produce a soft, full sound, as if 2 sounds were being created at the same time. This outstanding effect is widely used for guitars and keyboards in solo performances and chord backings. The CE-3 can create a stereo effect from a mono signal input by means of the A and B outputs, and incorporates both Delay Rate and Depth controls, as well as a switch for selecting the stereo mode.

Chorus CE-2

The CE-2 with a monaural output is as popular as ever.

for GUITAR for BASS for KEYBOARD

Using the CE-3

- *In order to make optimum use of the CE-3, it is important to fully understand how the Stereo Mode control works.*
- *In Mode I, the signal at the A output jack is a combination of the direct signal plus a positive-phase effect signal (direct + effect), while the signal at the B output jack is a combination of the direct signal plus a reverse-polarity effect signal (direct – effect). The two outputs can be further combined and sent separately to two amps in order to create a true, wide stage stereo chorus sound with a lush, swirling and deep effect.*
- *In Mode II, only the effect signal is sent to the A output jack, and the B output jack receives no effect signal at all. This is the same configuration found on the original CE-1 and on Roland's well-known Jazz Chorus Amplifiers.*
- *When using the monaural setting, set the Stereo Mode control to Mode I.*
- *Fig.1 shows the setting used for creating a conventional chorus effect.*
- *Fig.2 shows the setting used for creating a vibrato chorus effect. In this setting, the Rate control is set at the highest position.*

1. Conventional chorus effect
2. Vibrato chorus effect

SPECIFICATIONS

Power: 9V Battery, AC Adaptor (ACA Adaptor) • Current draw: DC 9V, 13mA • SN ratio: Over 90dB (IHF-A) • Maximum input level: 0dBm (100Hz), – 10dBm (1kHz) • Input impedance: 1MΩ • Output load impedance: Over 10kΩ • Dimensions: 70(W)×55(H)×125(D) mm (2.8″×2.2″×4.9″) • Weight: 400 g (0.88 lbs.)

DM-3 Delay

The DM-3 Delay provides an exceptionally wide range of delay effects in the range of 20 to 300msec by means of an adjustable Repeat Rate control. An Intensity control allows you to set the number of repeats , from a single slap back echo to self oscillation. The DM-3 employs a 2-output system that allows you to create 3-dimensional sounds with 2 amplifiers. Advanced circuits that suppress the distortion and noise ordinarily found in conventional delay circuitry. Together, these two circuits create the extremely clear sound which has made the DM-3 famous throughout the musical world. And of course, just like the other units in the Boss Compact Series, the DM-3 delivers its outstanding performance with power from a single 9V battery.

Using the DM-3

- *Because the delay time can be adjusted over an extremely wide range, the DM-3 can create a wide variety of effects, including reverberation and an echo effect, all by simply adjusting the Repeat Rate control.*
- *The 2-output system lets you create 3-dimensional sounds with 2 amplifiers.*
- *As with the 2-output system, when only the main output (mono) is used, the mixed sounds are output. When both outputs are used, the delayed sound and the normal sound are output separately, permitting the creation of much broader, deeper sounds.*
- *Fig.1 shows the setting for a conventional delayed sound.*
- *Fig.2 shows the setting for a single short-delay (doubler effect) sound. The key to this setting is to set the intensity control at "0."*

1. Conventional delay sound setting.
2. Single short-delay sound setting.

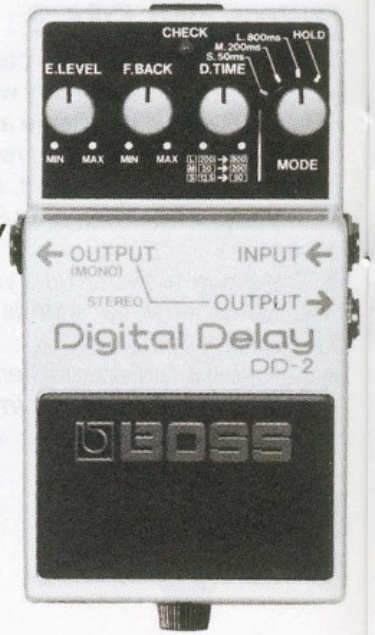
for GUITAR for BASS for KEYBOARD

SPECIFICATIONS

Power: 9V Battery, AC Adaptor (ACA Adaptor) • Current draw: DC 9V, 18mA • Delay time: 20ms to 300ms • Residual noise: – 100dBm (IHF-A) • Input impedance: 1MΩ • Output load impedance: Over 10kΩ • Dimensions: 70(W)×55(H)×125(D) mm (2.8″×2.2″×4.9″) • Weight: 450 g (0.99 lbs.)

DD-2 *Digital Delay*

The world's first compact digital delay, the DD-2 employs the same 12-bit system found in more sophisticated, rack-mountable digital delays. The DD-2 digital delay also features a wide, variable delay time range from 12.5msec all the way up to 800msec—wider than that of any analog delay on the market today—plus an excellent frequency response that is flat over the entire 40Hz to 7kHz range. A unique hold function and two stereo outputs are also included, adding up to an effect pedal that musicians everywhere have been waiting for.
The DD-2—creating new dimensions in sound reproduction.



Using the DD-2

- *Due to the wide 12.5msec to 800msec variable delay time range and the +1, −3dB frequency response over the entire 40Hz to 7kHz range, the DD-2 can produce a crystal clear delay sound, making it ideal not only for live performances but also for studio recording sessions.*
- *The desired hold effects can be produced within a range of 200msec to 800msec. By using the unlatch function, the hold effect will continue for as long as the pedal is pressed. For example, by setting the delay time at the tempo of the song to be played, you can take advantage of the DD-2's effects while you are pausing, letting you develop your own unique ways of effectively using the DD-2 during ensemble performances.*
- *The DD-2's 3-stage (S/M/L) Delay Mode selector and find-adjustment Delay Time control work together to let you perform extremely precise adjustment of the delay time.*
- *Unlike analog delay units, the DD-2 can cleanly create such delay effects as repeat-echo and doubler effects.*
- *Two stereo outputs let you produce richer-sounding effects.*

1. Tape echo-like delay setting.
2. Conventional short-delay setting.

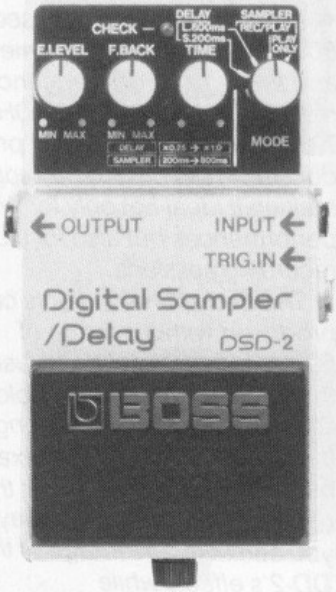
for GUITAR for BASS for KEYBOARD

SPECIFICATIONS

Power: 9V Battery, AC Adaptor (PSA Adaptor) • Current draw: DC 9V, 55mA (the D. Time control at center) • Type of A/D/A converter: 12-bit logarithm compression
• Delay time: 12.5ms (min) to 800ms (max) • Residual noise: −95dBm (IHF-A)
• Input impedance: 1MΩ (FET input) • Output load impedance: Over 10kΩ
• Dimensions: 70(W)×55(H)×125(D) mm (2.8″×2.2″×4.9″) • Weight: 450 g (0.99 lbs.)

DSD-2 *Digital Sampler/Delay*

Digital sampling and digital delay in one cost-effective package, attractively priced to bring sophisticated effect techniques to every musician. Superior sound quality and a high standard of performance is assured with the 12-bit A/D/A converter. With two modes (Rec/Play and Play), the DSD-2 allows the creative musician to add virtually any sound component to the music; from human voices and sounds of various instruments to animal sounds, auto engines and breaking glass. The recorded sample sound can be played back by depressing the pedal or by feeding a signal triggered externally into the DSD-2. Another interesting use is as an external sound source for rhythm machines. In this manner, the DSD-2's sample sound will be synchronized with the rhythm.



for GUITAR for BASS for KEYBOARD

SPECIFICATIONS

Power: 9V Battery, AC Adapter (PSA series) • Current Draw: 9V DC, 55mA • PCM System: 12-bit plus analog logarithm compression • Sampling mode: Sampling time (200 to 800ms, variable) Playback time (200 to 800ms, variable) • Delay mode: Delay time (50 to 200ms in S mode, 200 to 800ms in L mode, variable) • Frequency response: 40Hz to 7kHz ($\pm\frac{1}{3}$ dB) Sample/Delay 10Hz to 60kHz ($\pm\frac{1}{3}$ dB) Direct

Using the DSD-2

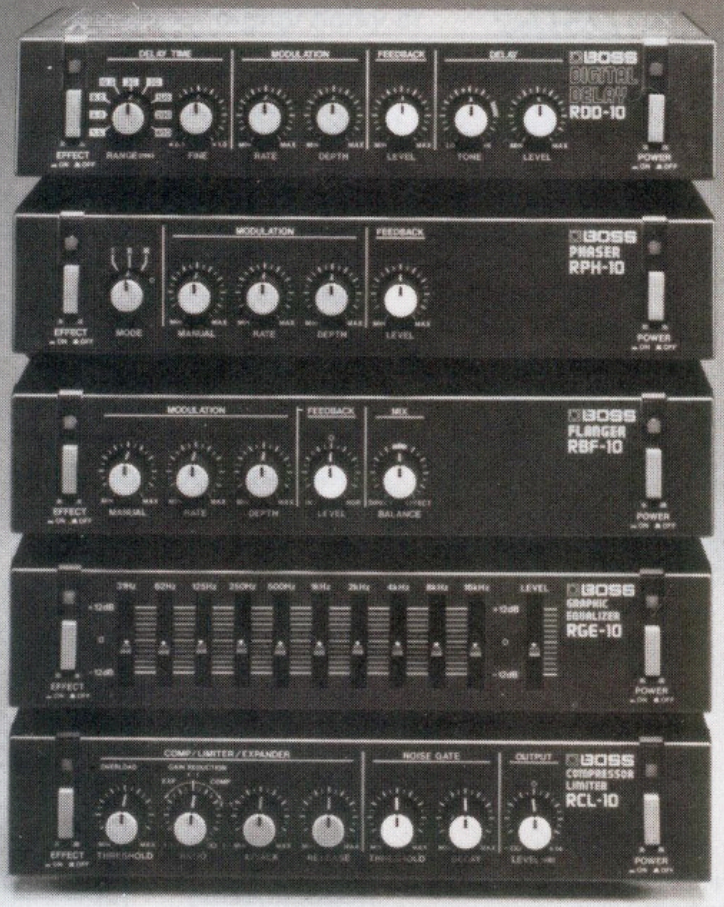
- *If used as a delay, delay time is continuously variable between 50ms and 200ms in the S mode, and from 200ms to 800ms in the L mode. The built-in Feedback control sets the number of repeats of the delayed sound as you desire, while the 12-bit A/D/A converter makes sure all the sounds are crystal clear.*
- *Used as a sampling machine, 2 modes are available, the Play and Rec/Play.*
- *In the Play mode, a recorded sample sound can be recalled whenever the pedal is depressed, or when an external trigger signal is fed to the DSD-2.*
- *In the Rec/Play mode, a new sound can be recorded while a previously recorded sound is being replayed. Recording and replay is achieved simultaneously while the pedal is depressed.*
- *If the Feedback control is set to its maximum, repeated overdubbing is possible.*
- *The pitch of replay can be varied with the Time control.*

* To record a desired sound into the DSD-2 for effects with the greatest fidelity, first record the sound on a tape recorder.

1. Conventional short-delay setting.
2. Sampler mode setting.

• Residual noise: – 95dBm (IHF-A) Effect – 100dBm or less (IHF-A) Direct • Controls: Effect Level, Feedback, Time, Mode • Jacks: Input, Output, Trig In, AC Adapter • Gain: Unity • Input impedance: 1MΩ • Output load impedance: Over 10kΩ • Dimensions: 70(W) × 55(H) × 125(D)mm ($2^{3}/_{4}$" × $2^{3}/_{16}$" × $4^{15}/_{16}$") • Weight: 450 g (1 lb)

MICRO STUDIO SERIES



Boss' latest Micro Studio Series packs the superb performance and numerous functions found on large effects racks into compact one-half rack-sized units. These units make fully professional specifications and capabilities available at affordable prices for all applications, from stage and studio to home recording and amateur enthusiast purposes. For high performance, you need the new standard in effects—the Boss Micro Studio Series

NEW DIMENSIONS

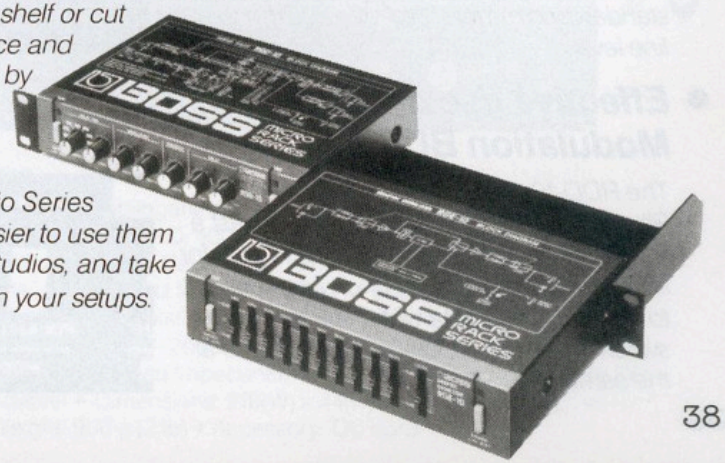
- ***Compact design means high performance in these 1/2 rack-size units***

The Micro Studio Series is exactly one half the size of a conventional rack-mounted unit, with dimensions of only 218mm(W) × 44mm(H) × 160mm(D), but there are no compromises in performance or functions. In fact, this Series provides the superior specifications and excellent functions that can only be found in costly larger units.

Options: BMR-5 rack for mounting up to 5 Micro Studio Series units.

- ***2 Micro Studio Series units fit one 19″ EIA-Standard rack shelf***

Compact enough so that two units can fit on a single 19″ rack with the optional RAD-10 rack-mounting adapter. These half-size units can double the effects capability of a single rack shelf or cut by half the space and weight required by a single effect. The compact dimensions of the Micro Studio Series also make it easier to use them outstage or in studios, and take up less space in your setups.



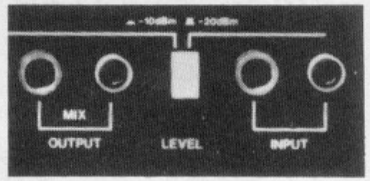
NEW SPECIFICATIONS

• Designed with specifications impressive enough to make the Micro Studio Series a star

Extremely low noise levels are guaranteed in the Micro Studio Series because Boss carefully selects and tests all circuitry and components. A quality noise reduction system is a part of every Micro Studio Series unit to assure studio-quality noise-free

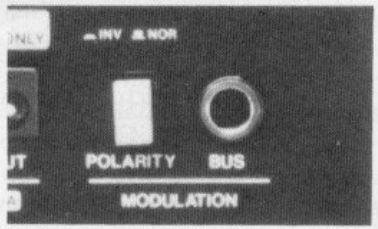
• Input/outputs feature phone and RCA pin jacks

All Boss Micro Studio units are equipped with both phone jacks for instrument input/output and RCA pin input/output jacks. Levels are switchable from the standard instrument level of –20dBm to a line level of –10dBm.



• Effective use of the Modulation BUS jack

The RDD-10 Digital Delay, the RPH-10 Phaser and the RBF-10 Flanger all boast a new function—the Modulation BUS jack for interlocking modulation, or driving one unit to inversely modulate with the Polarity switch when two RDD-10 units are used at the same time.



DIGITAL DELAY

RDD-10 DIGITAL DELAY

• This high-performance digital delay features a 12-bit PCM system plus analog logarithm compression for superior performance. Delay times of 0.75 to 400ms are available for a variety of effects, including echo, flanging, doubling and chorus. Moreover, the sonic quality of the RDD-10 must be heard to fully appreciate the wide frequency range, extending flat all the way up to 15KHz. A natural-sounding analog-style echo is also possible by adjusting the Delay Tone control. And no matter what effect you choose, the sound quality is excellent, thanks to the digital devices utilized in the RDD-10.

• Delay time is continuously variable with a 9-step range selector from 0.75 to 400ms and Fine adjustment control for precise settings.

• Precise settings are easy with Modulation Rate, Depth and Feedback controls producing effects ranging from echo flanging through doubling to chorus.

• Delay Tone controlfor mild analog-like echo effects and CE-1 type chorus effects.

• Modulation BUS jack allows interlocking of the modulation of two RDD-10 units or an RDD-10 and an RPH-10 or RBF-10 unit.

SPECIFICATIONS

PCM System: 12-bit plus analog logarithm compression • Delay Time Controls: Range (1.5, 3, 6, 12.5, 25, 50, 100, 200, 400ms), Fine (× 0.5 to × 1) • Frequency Response: 20Hz to 15kHz ($^{+1}_{-3}$ dB) Delay, 10Hz to 60kHz ($^{+1}_{-3}$ dB) Direct • Modulation Controls: Rate (0.07Hz to 10Hz), Depth • Feedback Control: Level • Modulation BUS Jack: 1 • Modulation Polarity Switch: 1 • Remote Jack: Effect On/Off • Input Level/Impedance: – 20dBm/1MΩ, – 10dBm/47kΩ • Output Level: – 20dBm, – 10dBm • Output Load Impedance: Over 10kΩ • Power Source: 9V DC by PSA series AC Adapter • Dimensions: 218(W) × 44(H) × 169(D)mm ($8^{9}/_{16}$″ × $1^{3}/_{4}$″ × $6^{11}/_{16}$″) • Weight: 900 g (2 lb) • Accessory: DC cord

FLANGER

RBF-10 FLANGER

- ***In addition to Rate and Depth controls, the RBF-10 features a Manual control to allow adjustment of the center frequency at which flanging occurs. An Invert/Normal Feedback function for creating rich-sounding flanging, as well as a Mix control to select the proportion of direct to effect sound, are also provided. The D + E and D – E outputs make stereo flanging effects possible and ensure the flexibility required to suit a wide range of musical styles. The RBF-10 also has a noise reduction system to guarantee that your effects are noise-free.***
- *Along with the Rate and Depth controls, the modulation section has a Manual control to adjust the center frequency at which flanging occurs.*
- *Feedback control for feedback level adjustment produces a wide range of flanging effects. Feedback level can be adjusted with the normal/inverse function for even richer flanging effects.*
- *Mix function balances the direct/flanging effect ratio and allows the RBF-10 to be used in the effect send and return loops of a mixer. This function also adds warmth, softness and clarity to the flanging effect, which usually has a metallic tone.*

SPECIFICATIONS

Controls: Modulation Manual (Delay Time: 0.4ms to 3.2ms), Modulation Rate (100ms to 16s), Modulation Depth, Feedback Level, Mix Balance • Input Level/Impedance: – 20dBm/1MΩ, – 10dBm/47kΩ • Output Level: – 20dBm, – 10dBm • Remote Jack: Effect On/Off • Modulation BUS Jack: 1 • Modulation Polarity Switch: 1 • Power Source: 9V DC by PSA series AC Adapter • Dimensions: 218(W) × 44(H) × 169(D)mm ($8^{9}/_{16}$″ × $1^{3}/_{4}$″ × $6^{11}/_{16}$″) • Weight: 900 g (2 lb) • Accessory: DC cord

PHASER

RPH-10 PHASER

- ***12-stage phase circuitry and 3 operation modes let the RPH-10 create a new world of phasing effects—from light and delicate phase shifting to bold dynamic effects. The Modulation manual control allows the center frequency where phase shifting occurs to be adjusted from low-frequency bands right up the high-frequency bands. Stereo phasing can be set up by interlocking the modulation of two units using the Modulation BUS jack. The phase-shifting circuitry features an original Boss custom IC and built-in noise reduction system to ensure exceptionally smooth and noiseless phase shifting.***
- *3 distinct operation modes provide 3 different phase-shifting effect.*
- *Mode I (6 stages) provides light and soft phase shifting, suitable for adding that extra touch to piano or rhythm guitar parts*
- *Mode II (10 stages) creates deeper phase shifting across the entire frequency range—from lows all the way up to the highs.*
- *Mode III (12 stages) produces a sharp and deep phasing sound—great for synthesized strings.*
- *The RPH-10 modulation section has a manual control for continuous adjustment of the frequency where phasing occurs to easily create a wide variety of phase-shifting effect.*

SPECIFICATIONS

Modes: I, II, III • Controls: Modulation Manual, Modulation Rate (100ms to 14s), Modulation Depth, Feedback Level • Phase Shift: 12 stages (2160°) • Gain Unity • Input Level/Impedance: – 20dBm/1MΩ, – 10dBm/47kΩ • Output Level: – 20dBm, – 10dBm • Output Load Impedance: Over 10kΩ • Remote Jack: Effect On/Off • Modulation BUS Jack: 1 • Modulation Polarity Switch: 1 • Power Source: 9V DC by PSA series AC Adapter • Dimensions: 218(W) × 44(H) × 169(D)mm ($8^{9}/_{16}$″ × $1^{3}/_{4}$″ × $6^{11}/_{16}$″) • Weight: 900 g (2 lb) • Accessory: DC cord

COMPRESSOR/LIMITER

RCL-10 COMPRESSOR LIMITER

- ***The RCL-10 Compressor/ Limiter integrates compressor, limiter, expander and noise gate functions into an extremely cost-effective single half rack-size unit. A high-performance VCA guarantees a high SN ratio and low distortion while ensuring clean sound. Features that surpass conventional full-sized units are now available at attractive prices with Boss' Micro Studio concept. Sophisticated features that are standard on this unit include individual Attack/Release Time controls, a Key-In jack, a Stereo Link jack, an Overload indicator and a Gain Reduction indicator.***
- *Continuously variable ratios from 1:1.5 to ∞:1 lets the RCL-10 be used as a limiter, compressor and expander.*
- *The Threshold and Decay controls form a noise gate to eliminate unwanted noise and leakage. This means that drum sound, especially bass drums, get that professional "tight" quality.*
- *Attack and release times are individually adjustable for fine-tuning of specific sounds.*
- *Key-In jack allows unit to perform as a de-esser or gate echo.*
- *Stereo Link jack interlocks two RCL-10 units for compression, limiting, expansion and noise-gating, all in stereo.*

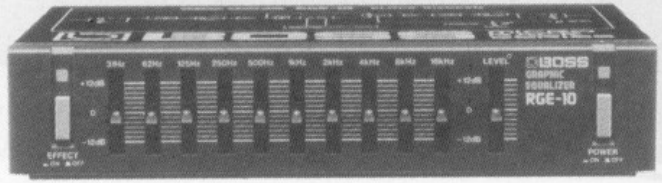
SPECIFICATIONS

Compressor/Limiter/Expander: Ratio 1:1.5 to ∞:1 continuously variable Threshold – 40 to 0dBm (Level switch at – 20dBm) Attack Time 0.2ms to 50ms, Release Time 50ms to 2s • Noise Gate: Threshold – ∞ to – 10dBm (Level switch at – 20dBm) Output Gain (Effect) – ∞ to + 14dB • Input Level/Impedance: – 20dBm/1MΩ, – 10dBm/47kΩ • Output Level: – 20dBm, – 10dBm • Output Load Impedance: Over 10kΩ • Remote Jack: Effect On/Off • Power Source: 9V DC by PSA sereis AC Adapter • Dimensions: 218(W) × 44(H) × 169(D)mm ($8^{9}/_{16}$" × $1^{3}/_{4}$" × $6^{11}/_{16}$") • Weight: 900 g (2 lb) • Accessory: DC cord

GRAPHIC EQUALIZER

RGE-10 GRAPHIC EQUALIZER

- ***To allow complete sound ontouring of your performances, the RGE-10 enables cuts and boosts of up to 12dB for each of the 10 octave bands from 31Hz to 16kHz. A Total Level control balances level differences between the equalized and the direct sound. With each slide control having its own LED indicator, you've got a graphic display that's easily visible in dark studios or onstage. All circuitry components in this unit were selected for low noise characteristics to give you professional studio-quality sound.***
- *10 octave bands centered at 31, 62, 125, 250, 500, 1K, 2K, 4K, 8K, and 16KHz allow fine tonal compensation and sound contouring as well as dramatic equalization effects.*
- *Total Level control compensates for level variations when the graphic equalizer is used.*
- *Each slide control has a center click stop for quick resetting to 0 level.*
- *Both phone jacks for instrument input/output and RCA pin jacks for direct connection to multi-track recorders and a wide range of audio and video systems are provided.*
- *Roland's FS-1 footswitch turns effects on and off without any click noises.*

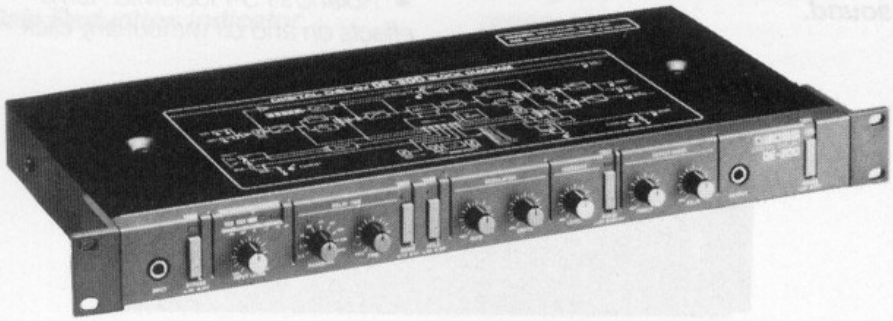


SPECIFICATIONS

Equalization: ± 12dB, 10 sliding controls each with an LED • Level Control: ± 12dB, Sliding control with an LED • Input Level/Impedance: – 20dBm/1MΩ, – 10dBm/47kΩ • Output Level: – 20dBm, – 10dBm • Gain: Unity • Output Load Impedance: Over 10kΩ • Remote Jack: Effect On/Off • Power Source: 9V DC by PSA series AC Adapter • Dimensions: 218(W) × 44(H) × 160(D)mm ($8^{9}/_{16}$" × $1^{3}/_{4}$" × $6^{5}/_{16}$") • Weight: 900 g (2 lb) • Accessory: DC cord

DE-200 *Digital Delay*

The DE-200 Digital Delay lets you create a wide array of effects through digital processing. These effects include delay, chorus, flanger, vibrato and doubling. Even though the DE-200 has a very affordable price, it incorporates an advanced 12-bit AD/DA converter which provides extremely high levels of performance. The combination of a delay time with an ultra-wide range of adjustment up to 1280msec, plus a frequency response from +0.5 to −3dB over a 10Hz to 10kHz range, ensures high creative potential and excellent sound quality without any reduction in the basic characteristics of a delay. The DE-200 also features several highly-advanced functions, including a Hold function and a unique Rhythm Sync function which allows you to use a trigger signal from a rhythm machine to control delay time.



Using the DE-200

- *The DE-200 allows you to switch between the delay time priority mode (1280msec max.) and the frequency response priority mode (flat from 10Hz—10kHz), making it ideal for applications ranging from recording and live performances to PA systems.*
- *For quicker, more accurate setting of the delay time, first adjust the 9-step Range control, then fine-adjust the delay time with the Fine control.*
- *The DE-200 is equipped with Modulation and Feedback controls, as well as with a Phase switch, thus allowing the user to create a wide range of effects, including flanger, vibrato and chorus effects.*
- *By taking advantage of the Rhythm Sync function, the user can create a delay effect that matches the rhythm of the music being played. Simply synchronize the delay's start/reset times with an external trigger signal from a rhythm machine.*
- *Two interesting applications of the DE-200's Rhythm Sync function are the unnatural repeat echo effect that can be created with the use of a programmable rhythm machine, and the automatic adjustment of the delay time as the music is played.*
- *The Hold function can be used to digitally record an artificially-created sound effect such as hand-clapping and play it back as an accent during a performance.*
- *The DE-200 offers two types of stereo effects, thanks to the 3-output system that produces 1) the direct sound, 2) the direct sound plus a sound effect and the direct sound plus a phase-inverted sound. In the stereo mode, you can choose either (1) or (2), or (1) and (2) with the direct sound reduced by adjusting the Mixer controls on the front panel.*

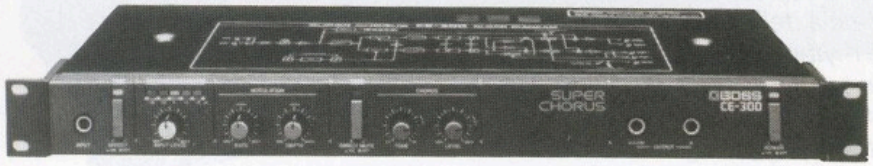
for GUITAR for BASS for KEYBOARD

SPECIFICATIONS

Delay time: Mode 1/1.25ms to 640ms, Mode 2/2.5ms to 1,280ms • Frequency response: Direct/10Hz to 100kHz $^{+0.5}_{-3}$dB, Mode 1/10Hz to 10kHz $^{+0.5}_{-3}$dB, Mode 2/10Hz to 4.5kHz $^{+0.5}_{-3}$dB • Dynamic range: Direct/110dB, Delay/80dB • Input level/impedance: −20dBm/1MΩ • Maximum input level: +12dBm • Output level/impedance: −20dBm/over 10kΩ • Dimensions: 482(W)×44(H)×240(D) mm • Weight: 3.5 kg

CE-300 *Super Chorus*

The next level up in chorus effects after the CE-1 Chorus, the world standard, the Boss CE-300 offers two independent chorus circuits to produce full pitch-deviation effects for a wider, fuller sounding effect in the stereo mode, as well as specific deep chorus effects like a multiplex chorus when used in the monaural mode. In addition to the Rate and Depth controls, the CE-300 Chorus provides a Chorus Level control to select the desired proportion of chorus effects to the direct sound. Also, by using the Chorus Tone control, any type of chorus effect desired is possible—from the popular CE-1 type mild chorus effect to one that's extremely sharp-sounding. All of this is done with a very high S N ratio, as the CE-300 incorporates built-in noise reduction circuitry. With unequalled ease-of-use and built to extremely high specifications, the CE-300 delivers recording-quality performance in the studio or onstage.



Using the CE-300

- *Circuitry features 2 independent chorus cirucits for pitch-deviation chorus effects when the CE-300 is used in the stereo mode with 2 amplifiers.*
- *In the mono mode, a full sound like that of a multiplex chorus effect is available.*
- *For creating many different-sounding chorus effects, the CE-300 comes equipped with four controls. Rate and Depth controls respectively set the rate and depth of modulation. The Chorus Tone control adjusts the sound of the effect while the Chorus Level control allows setting the desired direct/effect sound ratio.*
- *A and B outputs are combined at Output jack A to produce a combined chorus effect and direct sound (D + E), while the signal at Output jack B consists of a combined direct sound and inverted effect (D – E). This creates the well-known and well-used natural chorus effect as well as producing a spacious sound. Output jack A should be used when a monaural effect is desired.*
- *Remote effects are footswitch controlled from the remote jack.*
- *Input/output jacks are provided on both the front and rear panels for user convenience.*

SPECIFICATIONS

Input level: – 20dBm (rated), + 12dBm (maximum) • Input impedance: 1MΩ • Output level: – 20dBm (rated), + 12dBm (maximum) • Output load impedance: Over 10kΩ • Gain: Unity • Controls: Input Level, Modulation Rate, Modulation Depth, Chorus Tone, Chorus Level • Switches: Effect On/Off, Direct Mute, Power On/Off • Indicators: Effect, Input Level, Direct Mute, Power •Jacks: Input × 2, Output A (A + B) × 2, Output B × 2, Effect Remote (On/Off) × 1 • Dimensions: 482(W) × 47(H) × 246(D)mm (19″ × $1^{7}/_{8}$″ × $9^{11}/_{16}$″) • Weight: 3.1 kg (6 lb 14 oz)

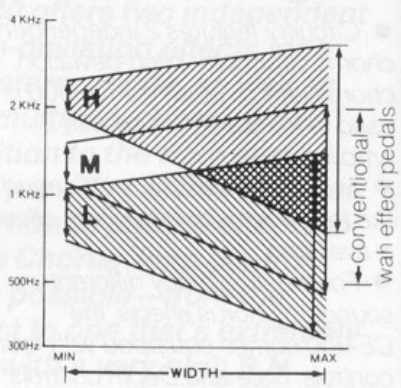
ROCKER WAH

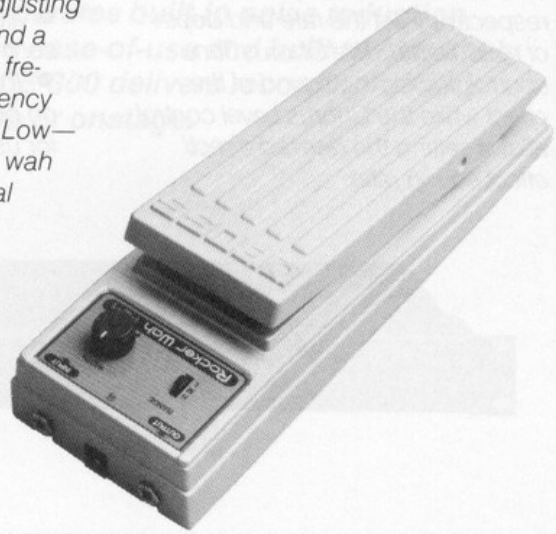
PW-1 *Rocker Wah* *(with soft case)*

The PW-1 Rocker Wah is a revolutionary wah effect pedal that can produce optimum wah effects for every type of electronic musical instrument, from guitars to keyboards and bass guitars. By incorporating Boss' original electronic volume control, the PW-1 completely eliminates the scratchiness found in conventional pedal volume controls. As a result, the PW-1 Rocker Wah can create attractive sounds for long periods of time.

- *With a Width control for adjusting the width of the wah effect and a Range control for setting the frequency at any of three frequency ranges—High, Medium and Low—the PW-1 can generate ideal wah effects for any type of musical instrument.*

Fig. Range Selection and Width Control





SPECIFICATIONS

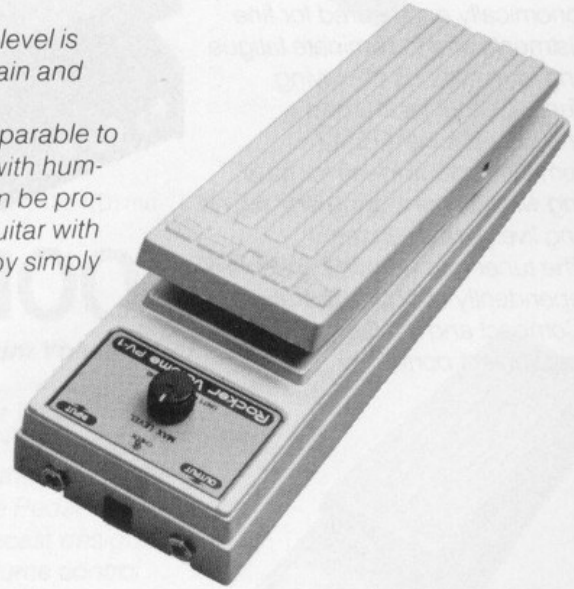
Power: DC 3V (UM-2 × 2), AC Adaptor (ACA Adaptor) • Current draw: DC 3V, 50mA • Input impedance: 470kΩ • Output load impedance: Over 10kΩ • Dimensions: 110(W)×65(H)×320(D) mm (4.3″ ×2.6″ ×12.6″) • Weight: 1.3 kg (2.86 lbs.) • Accessory: Vinyl Bag.

ROCKER VOLUME

PV-1 *Rocker Volume* *(with soft case)*

The PV-1 Rocker Volume pedal plays an important role in controlling volume levels. The PV-1 can also be used to produce a violin-like sound with no attack by lowering the volume during picking and by pressing the pedal after picking is finished.

- *A Hall effect device makes the PV-1 a revolutionary volume pedal that can completely eliminate scratching noise even during long periods of use.*
- *The maximum volume level is variable between Unity gain and a +20dB boost in gain.*
- *A powerful sound comparable to that of an electric guitar with humbucking type pickups can be produced from an electric guitar with single coil type pickups by simply pressing the pedal.*
- *The angle and stroke of the pedal is determined according to the latest principles of ergonomics in order to minimize player fatigue over long periods of use.*
- *A lightweight aluminum diecast case ensures carrying ease and durability.*



SPECIFICATIONS

Power: 9V Battery, AC Adaptor (ACA Adaptor) • Current draw: DC 9V, 5mA • Input impedance: 470kΩ • Output load impedance: Over 10kΩ • Maximum attenuation: Over 80dB • Dimensions: 110(W)×65(H)×320(D) mm (4.3″ ×2.6″ ×12.6″) • Weight: 1.3 kg (2.86 lbs.) • Accessory: Vinyl Bag.

FV-60 *Volume Pedal*

Compact, durable and lightweight with dual inputs/outputs.

- *2-inputs/2-outputs let you make the best use of keyboards and effect pedals with stereo capability, and also for controlling two keyboards simultaneously.*
- *Built-in Minimum Volume control simplifies volume adjustment range when soloing or just playing rhythm, while the pedal angle and stroke is ergonomically engineered for fine adjustments and to eliminate fatigue during long periods of playing.*
- *Tuner Output jack allows connection to tuner (TU-12 Chromatic Tuner is ideal) for easy tuning without generating any sound during live performances.*
- *The tuner can remain connected independently of pedal operation.*
- *Compact and lightweight design for convenient portability.*

SPECIFICATIONS

Jacks: Input 1, Input 2, Output 1, Output 2, Tuner Out • Controls: Main Volume (Pedal), Minimum Volume • Dimensions: 86(W) × 54(H) × 200(D)mm ($3^{3}/_{8}$″ × $2^{1}/_{8}$″ × $7^{7}/_{8}$″) • Weight: 400 g (14 oz)

FV-200 *Keyboard Volume*

Stereo-type volume pedal specially designed for use with keyboards.

- *Two separate stereo channels make the FV-200 ideal for use with stereo keyboards and for playing two keyboards simultaneously.*
- *Minimum Volume control is freely adjustable and also enables adjustment of the pedal control range.*
- *Built-in Center Point Setting Spring allows a normal volume level to be set so that emphasis can be added by just pressing the pedal.*
- *Lightweight rigid aluminum diecast body.*

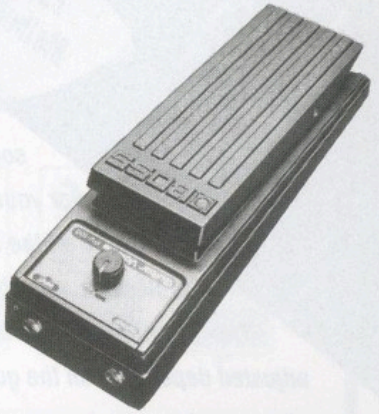
SPECIFICATIONS

Dimensions: 110(W)×65(H)×324(D) mm (4.3″×2.6″×12.8″) • Weight: 1 kg (2.2 lbs.)

FV-100 *Guitar Volume*

Featuring a Minimum Volume Control

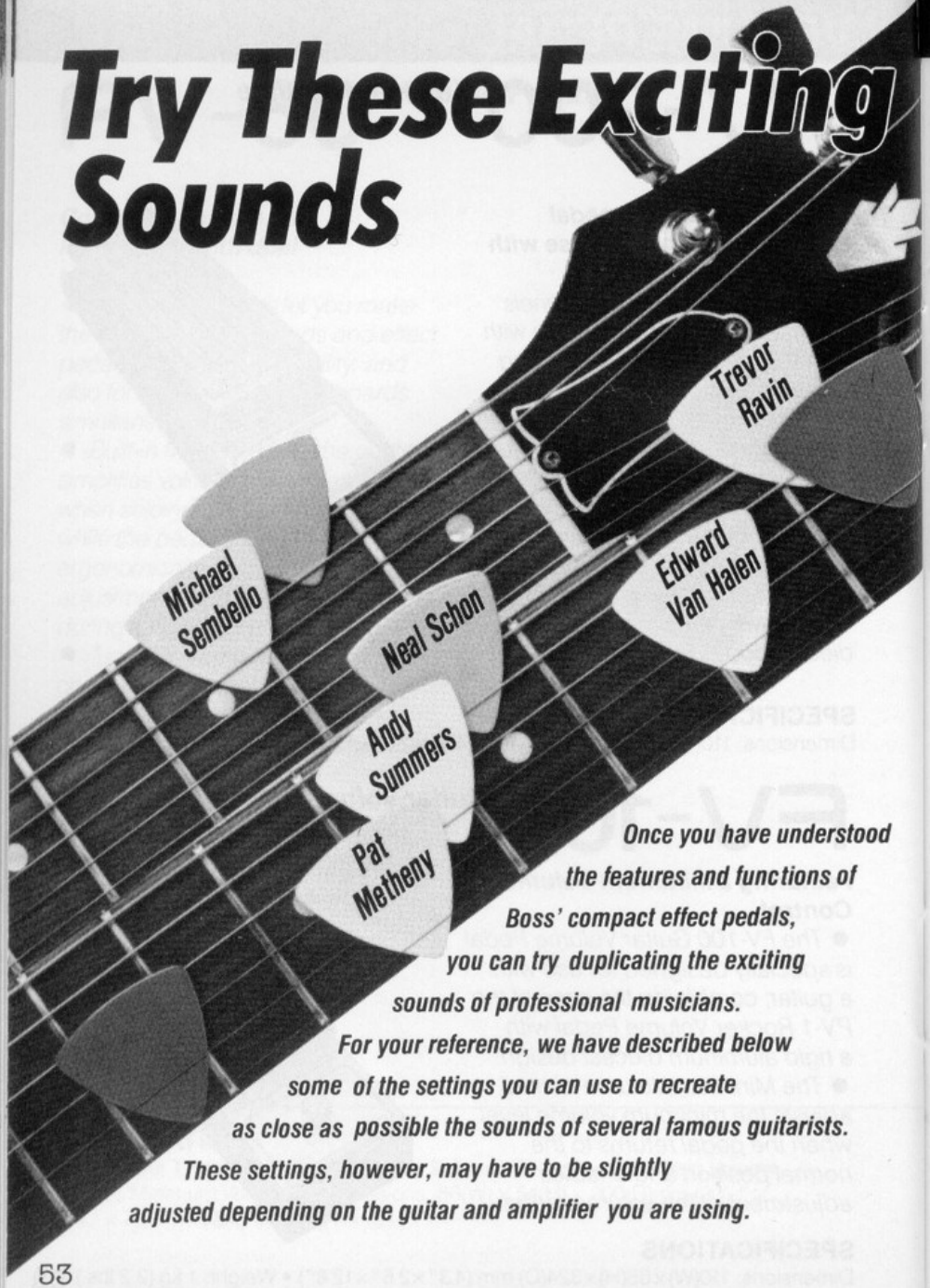
- *The FV-100 Guitar Volume Pedal is specially designed for use with a guitar, combining the ease of the PV-1 Rocker Volume Pedal with a rigid aluminum diecast design.*
- *The Minimum Volume control adjusts the minimum volume level when the pedal returns to the normal position and enables adjustment of the volume range.*



SPECIFICATIONS

Dimensions: 110(W)×65(H)×324(D) mm (4.3″×2.6″×12.8″) • Weight: 1 kg (2.2 lbs.)

Try These Exciting Sounds

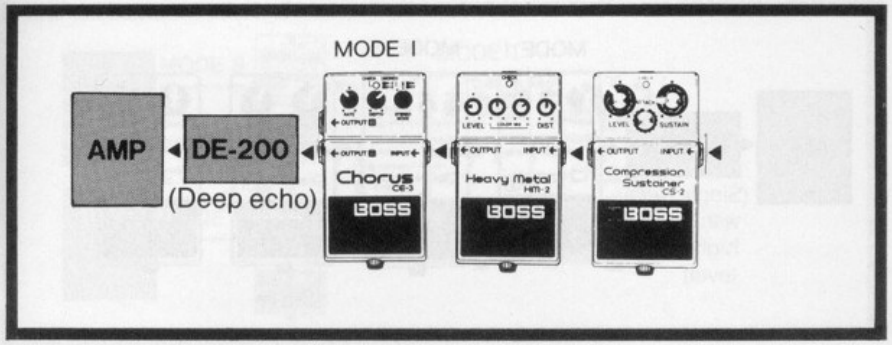


Once you have understood the features and functions of Boss' compact effect pedals, you can try duplicating the exciting sounds of professional musicians. For your reference, we have described below some of the settings you can use to recreate as close as possible the sounds of several famous guitarists. These settings, however, may have to be slightly adjusted depending on the guitar and amplifier you are using.

Neal Schon *(Journey)*

"Separate Ways" (Frontiers)

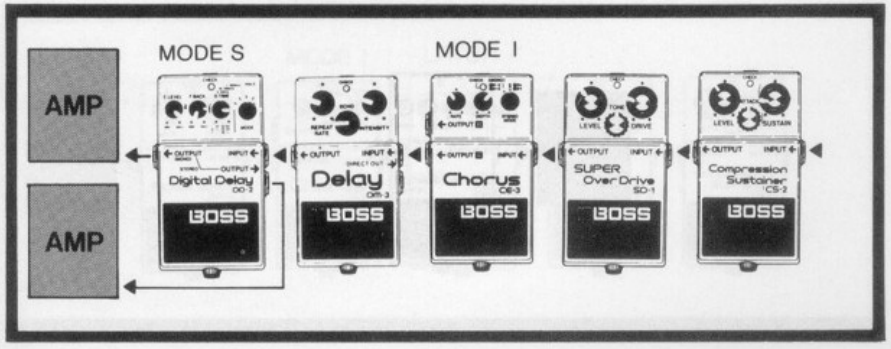
Adjust the amplifier to produce a treble-enhanced reverb effect and use the guitar's rear single-coil type pickup. Also set the Delay Time control on the DE-200 Digital Delay to between 400 and 700 msec., and turn the unit on while playing solos.



Andy Summers *(The Police)*

"Every Breath You Take" (Synchronicity)

To create Andy Summers' sound, set the CE-3 Chorus effect pedal to Mode I. Any type of guitar can be used, but be sure to play it using the center pickup position (combined sound from the front and rear pickups). The key to creating this sound is picking while slightly muting the sound.



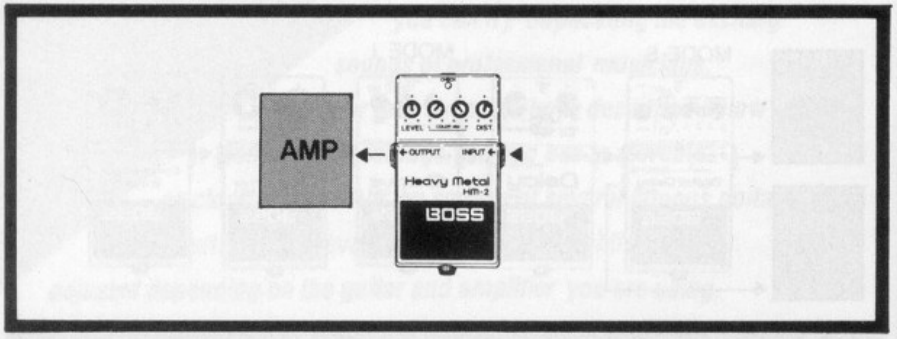
Michael Sembello *"Maniac" (Flashdance Soundtrack)*

The secret to the Michael Sembello sound is to use a softer pick and gentler stroking techniques. The sound is more effective if the repeat timing of the DE-200 Digital Delay is matched to the tempo of the song being played, which can be done by making use of the DE-200's rhythm sync function. Be sure to use a guitar with single-coil type pickups, and use the half-tone setting for the center and rear pickups.

Edward Van Halen *(Van Halen)*

"Beat It" (Thriller)

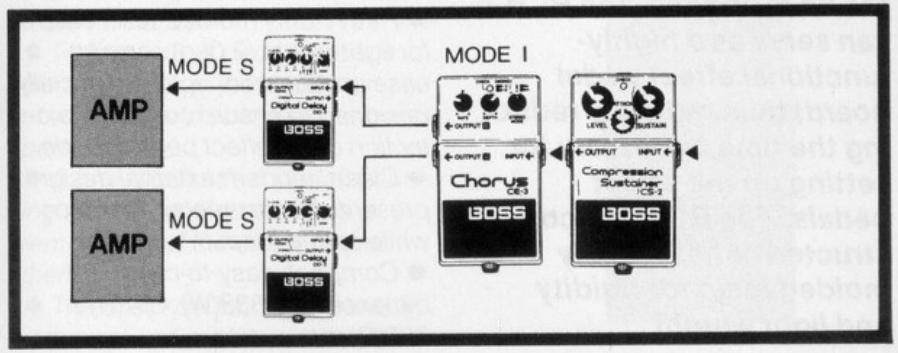
When performing on stage, connect digital delays (such as the Boss DE-200 or DD-2) in order to add a deep echo effect to the sound. Use a guitar with an arm and use the rear hum-bucking type coil pickup.



Pat Metheny *(The Pat Metheny Group)*

"Heartland" (American Garage)

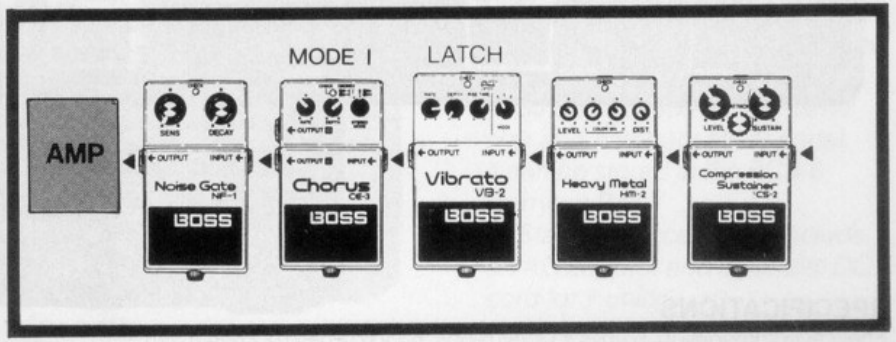
When creating the Pat Metheny sound, be sure to pay close attention to the different control settings on the 2 Delay effect pedals. In addition, take advantage of the amp's slight reverb effect and use a soft picking technique.
Pulling-off and hammering-on techniques should also be used often. Finally, use a full-acoustic type guitar with a front pickup.



Trevor Ravin *(Yes)*

"Owner of a Lonely Heart" (Lonly Heart)

The unique "Yes" guitar sound is created through a rather complicated recording procedure. First, turn the VB-2 Vibrato effect pedal on in order to play an arpeggio during the "... owner of a lonely heart.." chorus, and keep the NF-1 Noise Gate turned off while playing the backup. The result is most effective if a guitar with single-coil type pickups is used.

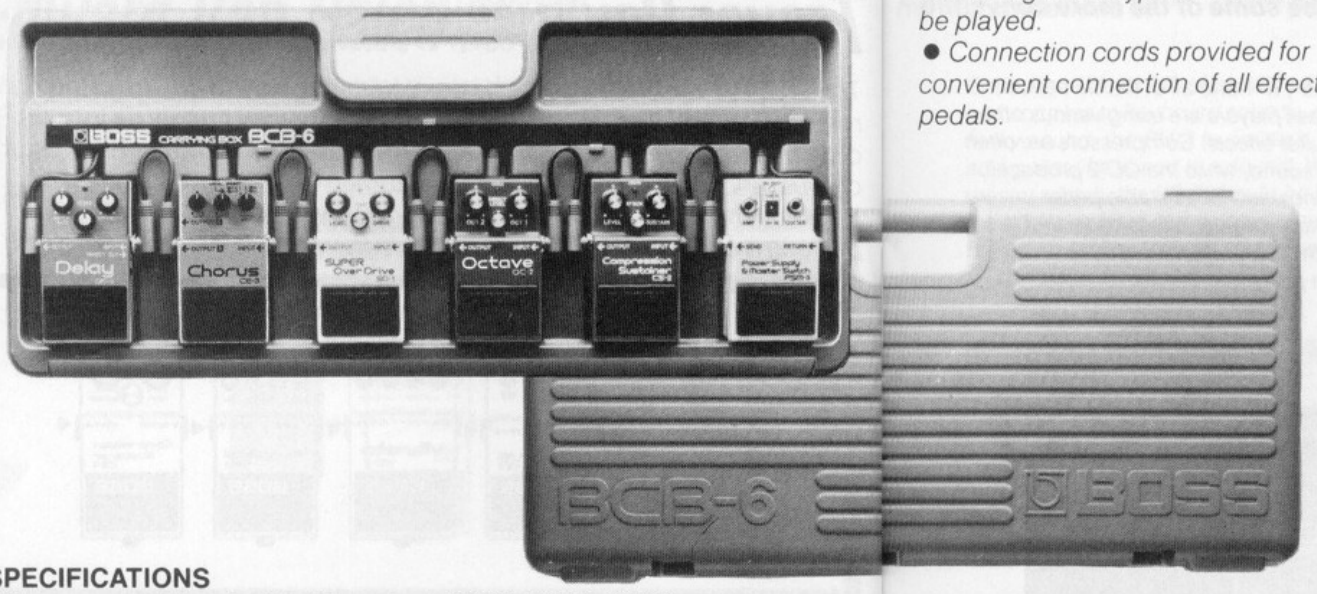


BCB-6 *Carrying Box*

The handsome BCB-6 Carrying Box can store up to 6 compact effect pedals for easy portability. When the lid is opened, the BCB-6 can serve as a highly-functional effect pedal board, thus radically reducing the time necessary for setting up the effect pedals. The BCB-6 is constructed of heavy-duty molded resin for rigidity and light weight.

Using the BCB-6 as a Carrying Box

- *Stores up to 6 standard, compact-size effect pedals (not limited to Boss effect pedals).*
- *Heavy-duty molded resin case for lightweight (2.0kg) carrying ease and superior rigidity, specially designed to ensure complete protection of the effect pedals inside.*
- *Clean, modern external design presents handsome appearance while on the road.*
- *Compact, easy-to-carry dimensions—633(W) × 84(H) × 280(D) mm.*



SPECIFICATIONS

Effect accommodation: 6 units • Dimensions: 633(W)×84(H)×280(D) mm (24.9″×3.9″×11.0″) • Weight: 2.0 kg (3.5 lbs.) • Accessories: Connection cords

Using the BCB-6 as an Effect Pedal Board

- *Removing the lid turns the BCB-6 into an effect pedal board that's already set up for any kind of performance.*
- *Tedious effect pedal set-up is eliminated, as is the messy tangle of wires around your feet during a performance.*
- *A one-touch effect pedal mounting system requires no tools or remodeling of the effect pedals themselves.*
- *The effect pedals can be easily removed and replaced with others according to the type of music to be played.*
- *Connection cords provided for convenient connection of all effect pedals.*

PSM-5

Power Supply & Master Switch

Upgrading the System with the PSM-5

The PSM-5 Power Supply & Master Switch provides the BCB-6 with a comprehensive effect pedal board function.

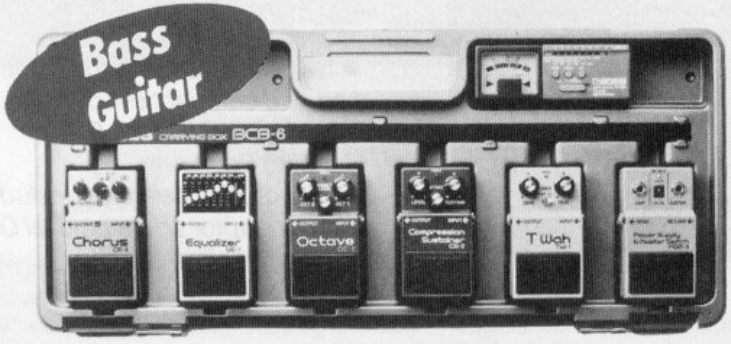
- *The PSM-5 supplies power for up to five 9V effect pedals.*
- *Simply pressing the pedal permits switching between the effect and normal modes of two or more effect pedals.*
- *Since the PSM-5 is the same size as a compact effect pedal, it can be stored in the BCB-6 Carrying Box.*
- *Standard accessories include an AC adaptor and a parallel DC cord for 7 units.*

The key to hard rock is knowing how to use distortion effect pedals. As shown in the photo, both the OD-1 and DS-1 can be connected to a guitar so that you can create the type of distortion you like. If you prefer hard distortion, the HM-2 effect pedal is ideal.
We recommend using the DM-3 for creating a combination of feedback rendition style with arming, and adding the PH-1R for creating a radical metallic sound.
To prevent howling and reduce noise, use the GE-7.

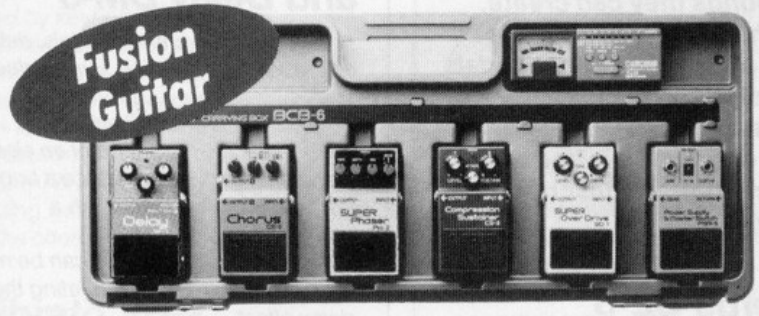
Boss Effect Pedals f

In this section, we will describe some of the more conventio

Typical effect pedals for bass guitars include the TW-1 and all of the CE series. Recently, however, an increasing number of bass players are using various other types of effect pedals to create special bass guitar effects. Compressors are often used as limiters in order to create a funky bass sound, while the OC-2 produces an interesting synthesized bass-like sound. Renowned for its stable performance, the OC-2 is ideal for use with bass guitars. Another effect pedal that is being increasingly adapted to bass playing is the GE-7 which is used to create a clear bass sound that matches the size of the performance hall.



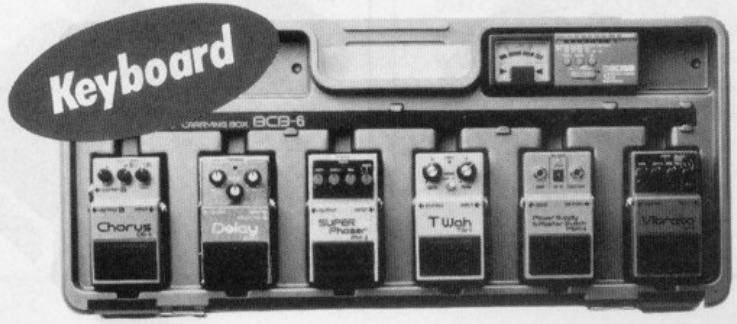
The basic effect pedals for fusion guitars include the SD-1 and CE-3, as well as the DD-2 and DM-3.
Different combinations of these basic effect pedals can be used with a wide variety of musical styles, from pop to rock. When using a delay effect pedal, a single delay effect should be used. Effect pedals which create a 3-dimensional sound are generally kept on all the time. Effect pedals besides the 4 basic types, such as the PH-2 for monotone backing, ect., can be selected to match the needs of individual performances.



or Every Instrument

nal combinations of effect pedals and musical instruments.

Chorus and delay effect pedals are primarily used with keyboards to add depth and softness to keyboard sounds, however, the TW-1 can be used to create a funky sound, the PH-2 to create a rotary speaker-like sound and the SD-1 to add guitar-like speed to a sound. When used in combination with the PSM-5 master switch, the VB-2 should be connected outside the PSM-5's loop so that the VB-2 operates in the unlatch mode. The CE-3 should also be connected outside the PSM-5's loop whenever you are using the stereo mode.



Guide to Using Boss Effect Pedals with Keyboards

For keyboard players who refuse to accept any limits on the sounds they can create, Boss has developed a wide range of compact effect pedals that will make every performance a success. Some of these effect pedals and their applications are described below.

Chorus CE-3

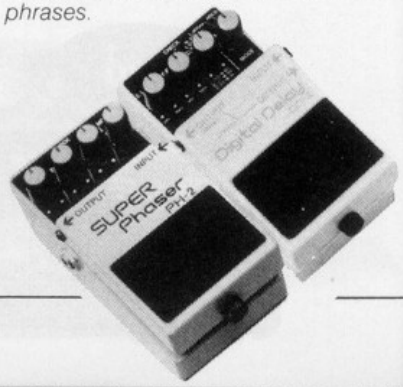
- *With its amazingly spacious sound and wide range of effects, the CE-3 chorus is ideal for use with keyboards.*
- *By connecting the CE-3 to a combo organ, a deep, bassy sound can be produced.*
- *The CE-3 can also add accents to music when it is used to play chords on an electric piano.*
- *The CE-3 provides greater depth and richness to any synthesizer sound.*

Digital Delay DD-2 and Delay DM-3

- *Together with chorus pedals, delays are essential in creating a wide, deep sound.*
- *The DD-2 and DM-3 add a rich reverb effect to the sound of an electric piano or organ, and produce a bright, shiny sound when used with a synthesizer.*
- *Any synthesized sound can be made to stand out by simply repeating the delay effect.*
- *Delay effects are also essential in softening and mellowing a hard sound.*

Phaser PH-2

- *Phasers were originally developed to electrically produce the sound of a rotary speaker. They are ideal for use with electric pianos and electronic organs.*
- *The PH-2 can be used to swell a monotonous solo phrase.*
- *The PH-2 can also be used to add a tremolo effect which is produced by wind instruments to monotonous solo phrases.*



T Wah TW-1

- *Wah effect pedals are commonly used by keyboard players.*
- *When connected to a clavinet or electric piano, the TW-1 can add richer, more dynamic nuances to a monotone.*
- *A funky effect can be added to percussive chord work.*
- *The TW-1 is also very effective in adding wah effects to organ backing or to the chord work of an electric piano.*

Vibrato VB-2

- *The VB-2 is the world's first compact-type vibrato effect pedal.*
- *Up to now, a vibrato effect could not be produced with electric pianos, but with the VB-2, a vibrato effect can be created for everything from solos to backings.*
- *When used with a synthesizer, sophisticated vibrato effects which up to now could not be produced through fingering can be created by simply pressing a pedal.*

Over Drive OD-1

- *Recently, distortion effect pedals such as overdrives have been used to produce guitar-like overdriven, or hard sounds.*
- *The OD-1 can be used to distort an organ tone in order to create a more powerful sound.*
- *The OD-1 can also be used to add guitar-like power and speed to the sound of a monophonic synthesizer.*
- *Connecting the DS-1 to the OD-1 will allow you to create an even more powerful sound.*

Experiment on your own!

- *These are only some of the effects that can be created with Boss effect pedals, but you are free to experiment with new keyboard/effect pedal combinations. We are sure that you will discover a number of combinations on your own that can be used to create a whole new range of exciting personal sounds.*

Play Bus

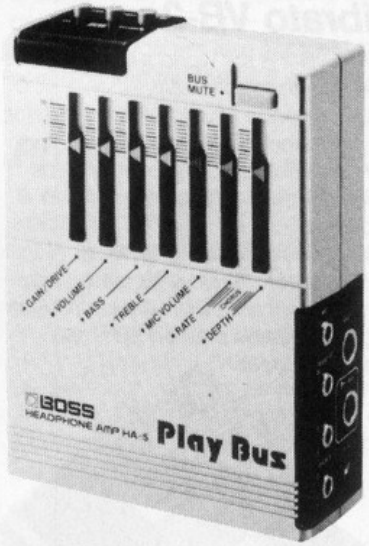
Headphone Amp HA-5

(with belt clip)

The HA-5 Headphone Amp incorporates a wide range of advanced functions into a single compact unit. The battery-powered HA-5 lets you play musical instruments anytime, anywhere, and although the HA-5 produces as dynamic a sound as a large-size amplifier, it allows you to play at significantly high volumes, even late at night, without bothering the neighbors. Incorporating three different effect circuits—overdrive, stereo chorus and stereo short delay—a single HA-5 unit permits the user to create an extensive array of sounds. By connecting two or more HA-5 units together, several musicians can play together. In addition, any electronic musical instrument can be connected to the HA-5, making it ideal for practicing playing techniques at home as well as for tuning prior to live performances.

Incorporates 3 highly-sophisticated effect circuits.

Incorporating the same effect circuits as the Boss Compact Series, the HA-5 can create a remarkable number of effects including overdrive, stereo chorus and stereo short delay. The built-in separate Bass and Treble controls allow you to enjoy an amazingly wide range of sounds.



SPECIFICATIONS

Power: DC9V (UM-3 × 6), AC Adaptor (PSA Adaptor) • Input impedance: Input/470kΩ, MIC/2.2kΩ, Cassette: 47kΩ, Phones/8Ω ~ 300Ω, P-Bus in/out impedance 10kΩ • Dimensions: 90(W)×120(H)×42(D) mm (3.5″ ×4.7″ ×1.7″) • Weight: 350 g (0.77 lbs.)

Allows playing along with a rhythm machine or with tape-recorded music.

By connecting the HA-5 to a rhythm machine or tape recorder, the user can match an instrument to the accompaniment of a particular rhythm or piece of recorded music. The HA-5 is thus effective for practicing and copying songs and playing techniques.

Fatigue-free playing even after long hours of use.

Because the HA-5 adds a wide stereo effect to the sound of a musical instrument, the sound image will not be concentrated at a single "point" inside the musician's head. Thus, a musician can comfortably use the HA-5 even for long periods of time.

Provides the versatility of a headphone jam session.

Two HA-5 units can be connected together by means of a single guitar cord. If one person plays a guitar and the other plays a keyboard, both musicians can play while listening to the other person's playing. In addition, three or more HA-5 units can be easily connected together by means of the optional J-5 multiple jack, allowing an entire band to jam together.

RH-11M Stereo Headphones with Built-In Microphone for musicians who wish to sing.

Exceptionally light in weight, the optional RH-11M Headphones with a Built-in Microphone allows a musician to sing while playing a musical instrument.

RH-11M Stereo Headphones with Built-In Microphone

SPECIFICATIONS

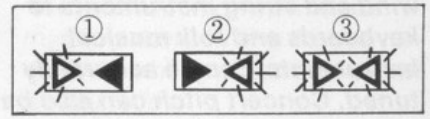
Headphones: Type: Dynamic open air Speaker: Dynamic 12μ polyester-film • Impedance: 50Ω • Sensitivity: 101dB/mW • Power handling capacity: 100mW (for one unit) • Frequency response: 18Hz to 22kHz • Microphone: Type: Dynamic, Directivity: Differential, bi-directional • Frequency response: 50Hz to 20kHz (at close range) • Impedance: 160Ω • Assembly Weight: 2.4 oz. without cord, Total weight: 3.2 oz. with cord and 2 plugs

TU-12 *Chromatic Tuner*

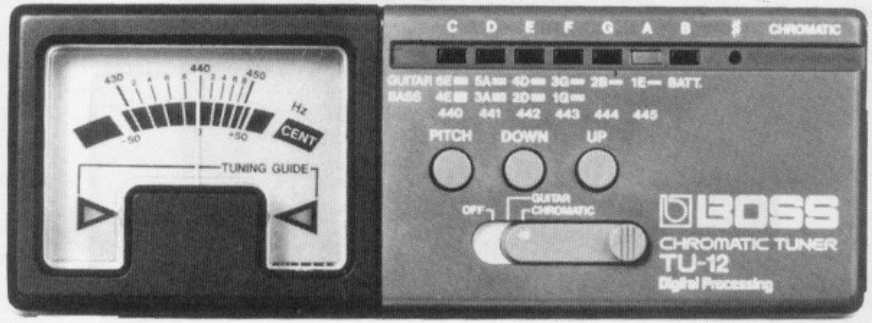
(with soft case)

Unlike conventional tuners, the TU-12 Chromatic Tuner fully automates tuning adjustment through a revolutionary digital processing system, thus eliminating adjustment of the switch for each note to be tuned. When set in the chromatic mode, tuning can be done by simply playing the instrument. The TU-12 is also equipped with two triangular LEDs that light up when a perfect pitch is achieved in order to speed up the tuning process. In addition, the Pitch button permits the TU-12 to be set at different concert pitches between 440Hz and 445Hz (in 1Hz step). The sweep meter has indications for the range between −50 cent and +50 cent. The world's best-selling tuner, the compact and high-performance TU-12 is ideal for use with all types of guitars, including bass guitars.

- *The world's TU-12 automatically reads and displays the note being played and its pitch.*
- *In addition to the chromatic tuning mode which permits fully automatic tuning, the TU-12 has a guitar mode which is convenient for tuning after replacing guitar strings.*
- *The highly-sensitive built-in condenser microphone makes the TU-12 ideal for acoustic instruments.*
- *Input and output jacks make it possible to connect all types of electric guitars, including bass guitars, to the unit for quick tuning during live performances.*
- *Two triangular-shaped LEDs provide at-a-glance indication of which direction the musician must adjust the instrument in order to become in tune. Both LEDs light up when the instrument is in perfect tune, facilitating tuning even in dark locations or from a distance.*
- *The TU-12 incorporates a sweep meter that is specially designed to facilitate optimum tuning.*
- *The TU-12 also incorporates a battery indicator which indicates the amount of battery power remaining.*
- *Compact, lightweight design: Only 170g.*



1. Lower pitch
2. Higher pitch
3. Perfect pitch



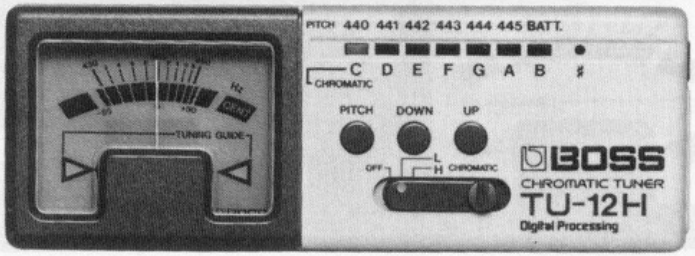
SPECIFICATIONS

Power: 9V Battery, AC Adaptor (PSA Adaptor) • Current draw: 7mA (LED off), 20mA max. • Tuning range: C1-B5 • Accuracy: ± 1 cent • Oscillator: Quartz (3.579545MHz) • Built-in microphone: Electret condenser microphone • Dimensions: 145(W)×35(H)×53(D) mm (5.8″×1.5″×2.1″) • Weight: 170 g (0.37 lbs.)

TU-12H *Chromatic Tuner* *(with soft case)*

The TU-12H is an enhanced version of the TU-12, the world's best-selling chromatic tuner. The TU-12H features the TU-12's easy-to-use automatic functions and superior performance, plus an expanded tuning range of C_1 to B_6. With the TU-12H, instruments of all frequencies, from wind and string instruments to keyboards and folk musical instruments, can be accurately tuned. Concert pitch can also be automatically adjusted within 440 and 445Hz in 1Hz step (with a −50— +50 cent variable pitch range on the sweep meter).

- *Fully-automatic read-in and display of the note being played and its pitch eliminates the need for adjusting a switch, thus providing extra convenience to players even when using both hands to play.*
- *Covering a frequency range from that of a B♭ bass tuba to a B♭ clarinet or flute, the TU-12H is ideal for eliminating instability in both high notes and long tones.*
- *With string instruments, the TU-12H is effective not only in the tuning of violins, violas and cellos, but also as an aid in mastering the correct fingering positions, i.e. when learning scales.*
- *The TU-12H features a compact, lightweight design for easy portability.*
- *The sweep meter is designed to ensure optimum tuning. Together with a series of LEDs, this sweep meter ensures more precise tuning.*



SPECIFICATIONS

Power: 9V Battery, AC Adaptor (PSA Adaptor) • Current draw: DC 9V, 7mA (LED off) to 20mA (max) • Tuning range: C_1 to B_6 • Pitch accuracy: ± 1 cent • Standard oscillator: Quartz (3.579545MHz) • Concert Pitch: 440Hz to 445Hz, 1Hz step • Dimensions: 145(W)×35(H)×53(D) mm (5.8″×1.5″×2.1″) • Weight: 170 g (0.37 lbs.)

Dr. Rhythm *Dr. Rhythm DR-110* *(with soft case)*

The highly-advanced DR-110 Rhythm machine lets you program two complete songs, each up to 128 measures in length, through the use of the 16 preset and 16 programmable rhythm patterns. The DR-110 incorporates various innovations into a compact body, including an easy-to-read graphic display which permits at-a-glance confirmation of a rhythm pattern for each measure, as well as a real-time writing mode that allows you to write in a rhythm pattern by simply tapping the sound source key at the desired tempo.

- *The 6 different sound sources include Bass Drum, Snare Drum, Open Hi-Hat, Closed Hi-Hat, Cymbal and Hand Clap. All 6 sound sources are extremely realistic.*
- *The DR-110 is provided with an Accent control for easy adjustment of the strength of the accenting, and with a Tone control for adjusting the output level.*
- *The DR-110 comes with two rhythm pattern writing modes—a real-time writing mode and a step-writing mode.*
- *The DR-110 also comes with a headphone jack, plus a Play Bus output jack that allows the unit to be connected to the HA-5 Headphone Amplifier through a single cord.*

SPECIFICATIONS

Power: DC6V (UM-3 x 4), AC Adaptor (PSA Adaptor) • Number of memorizable rhythms: 32 kinds (16 preset rhythms, 16 programmable rhythms) • Number of steps: 1 to 16 steps/1 to 12 steps • Songs: 128 measures x 2 songs (continuous: max. 128 measures) • Sound sources: Bass Drum, Snare Drum, Cymbal, Closed Hi-hat, Open Hi-hat, Hand Clap, Accent • Tempo control range: ♩ 45 to 300 • Dimensions: 190(W)×30(H)×110(D) mm (7.5″×1.2″×4.3″) • Weight: 450 g (1 lbs.) with batteries • Accessories: UM-3 dry battery (BR-3) x 4, Original carrying case.

DB-66 *Dr. Beat (with soft case)*

Practice rhythms with the eye and ear using the Tap key.

- *Equipped with an accurate quartz electronic metronome, correct tempo setting is immediate with the built-in display. Rhythm tempo and beat are monitored through a built-in speaker and 2 LEDs.*
- *Tap the Tap key in time to the music to get an instantaneous readout of the music's tempo.*
- *Sets beat at 0, 1, 2, 3, 4, 5 or 6 beats per measure with a chime at the first beat.*
- *With 4 basic rhythm units, you can practice just about any rhythm—from syncopation to 8-beat to complex time signatures by making use of the individual level controls.*
- *The tempo can be set exactly at any point between 35 to 250 quarter note beats per minute with the Up/Down switch.*
- *Reference signal set at A4 (440Hz) to allow instrument tuning.*

SPECIFICATIONS

Power: 9V Battery, AC Adaptor (BOSS PSA series) • Current draw: 9V DC, 9mA (in the stop mode) • Tempo: 35 to 250 beats per minute • Tempo accuracy: ±0.15% • Beats: 0, 1, 2, 3, 4, 5, 6 •Tuning note: A (440Hz, ±0.2 cents) • Rhythm indicators: Audio beep and dual LEDs • Controls: Rhythm volume × 4 (♩. ♪. ♪♪. ♬), Beat level, Total volume • Switches: Beat, Down, Up, Start/Stop (also functions as the Tap switch), Mode • Jacks: Headphones (mini stereo), AC adapter • Dimensions: 170(W) × 33(H) × 96(D)mm ($6^{11}/_{16}$″ × $1^{5}/_{16}$″ × $3^{3}/_{4}$″) • Weight: 320 g (11 oz) without battery • Accessory: Soft case

DB-33 *Dr. Beat (with hand strap)*

An electronic metronome that lets you practice rhythms.

- *The DB-33 features four basic rhythm units with individual level controls for each that let the user accentuate the rhythm.*
- *Can be used to practice virtually any type of rhythm, from complex time signatures to syncopation.*
- *The beat can be set at either 0, 2, 3, 4, 5, or 6 beats per measure.*
- *The tempo is continuously variable between 40 and 208 quarter-note beats per minute, and can be monitored through both a built-in speaker and two LEDs.*

SPECIFICATIONS

Power: 9V Battery, AC Adaptor (ACA Adaptor) • Current draw: 6.5mA (no signal) • Tempo: mm (♩) 40 ~ 208 (40-208 beats per minute) freely variable • Beats: 0, 2, 3, 4, 5, 6 • Rhythm indicators: Audio beep and dual LED's • Controls: Tempo, Rhythm volume (♩. ♪. ♪♪. ♬), beat switch, start switch, volume • Dimensions: 168(W)×90(H)×38(D) mm (6.6″×3.5″×1.5″) • Weight: 350 g (0.77 lbs.)

GE-10 *Graphic Equalizer*

•GE-10 for creating a world of sound effects, from instruments to vocals.

The GE-10 Graphic Equalizer allows the user to control tone coloring by adjusting the frequency response, as well as to control a specific frequency range in order to prevent noise and howling. The GE-10 provides the user with 10 bands of equalization from 31Hz to 16kHz, permitting a wide range of sounds, from instruments to vocals, to be precisely created and controlled.

SPECIFICATIONS

Power consumption: 3W • Frequency centers: 31Hz, 62Hz, 125Hz, 250Hz, 500Hz, 1kHz, 2kHz, 4kHz, 8kHz, 16kHz • Frequency response 20Hz—40kHz ±1dB• Gain: Unity • SN ratio: Over 100dB • Input impedance: 220kΩ • Output load impedance: More than 600Ω • Maximum output level: +15dBm • Dimensions: 220(W)×78(H)×155(D) mm (8.7″×3.1″×6.1″) • Weight: 1.9 kg (4.2 lbs.)

MONITOR SPEAKER

MS-100A *Monitor Speaker*

The easy-to-use MS-100A Monitor Speaker incorporates into a compact body a wide range of innovations that help to improve the monitoring effect, and can handle an exceptionally high 100W of input power. As a result, the MS-100A can provide a musician with excellent support while playing any instrument, from guitars, basses, keyboards and drums, and even while singing.

- *Two newly-developed 12cm full-range speakers with high-performance magnetic circuits and housed in a sealed enclosure permit the MS-100A to handle a full 100W of input power for a significantly more powerful sound.*
- *A 4/16Ω impedance selector and attenuator on the front panel permit simpler adjustment of the volume.*
- *An optional MSA-100 Speaker Adaptor allows the MS-100A to be mounted on a microphone stand or on a wall/ceiling.*
- *Parallel connection extension jacks on the back panel allows a number of MS-100A units to be connected together, thus permitting the monitoring system to be expanded according to the size of the stage and the composition of the band.*

SPECIFICATIONS

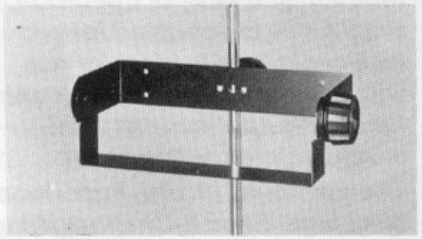
Frequency response: 100Hz—17kHz • Power handling capacity: 100W • Selector switch: 4Ω/Off/16Ω · 0dB/ – 6dB/ – 12dB/ – 18dB • Impedance: 4Ω/16Ω • Speakers: 2 × five inch full range • Jacks: Parallel Input and Output • Dimensions: 300(W)× 167(H)×162(D) mm (12″ ×6.7″ ×6.5″) • Weight: 3.5 kg (7.7 lbs.) • Accessory: Metal adapter for Microphone stand

MICRO MONITOR AMP

MA-15A *Micro Monitor Amp*

The easy-to-operate MA-15A Micro Monitor Amplifier can be used as a practice amplifier, stage monitor and more. It is compact, yet produces 15W of output power, and incorporates a full-range 12cm speaker that produces a clear, powerful sound. A headphone jack also lets you enjoy practicing without disturbing others.

- *High and Low gain inputs allow the MA-15A to be connected to a wide array of instruments, including guitars, keyboards, microphones, etc.*
- *The MA-15A can be connected to a tape recorder or FM tuner by means of the Auxiliary input, permitting you to play an instrument while also operating a tape recorder or tuner, thus facilitating the practice of playing techniques.*
- *An optional MSA-100 Speaker Adaptor allows the MA-15A to be attached to either a music stand, microphone stand or wall/ceiling for adjustment of the angle of the unit.*



MSA-100

SPECIFICATIONS

Power: AC Powered • Output: 15W (RMS) • Power consumption: 23W • Speaker: 5 inch full range • Dimensions: 300(W)×167(H)×162(D) mm (12″ ×6.7″ ×6.5″) • Weight: 3.1 kg (7.5 lbs.) • Accessory: Metal adapter for Microphone stand.

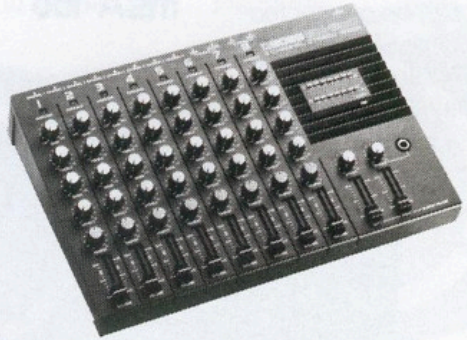
8-CHANNEL STEREO MIXER

BX-800 8-Channel Stereo Mixer

Unlike conventional 8-channel mixers which are quite large, heavy and expensive, the BX-800 is a new and innovative 8-channel stereo mixer featuring a compact and lightweight design, a low price and attractive styling. Of course, in terms of performance, function and ease of operation, the BX-800 is designed for professionals, and is ideal for use with a wide range of instruments for mixing applications from multi-track recording to PA.

The Advanced Mixing Functions of a Large-Sized 8-Channel Mixer in a Compact Design

The BX-800 incorporates extensive mixing functions, including channel gain, separate bass/treble controls, effect send/return, pan pot, sliding volume controls, and a headphone jack for monitoring, all in a single compact design. With such advanced functions and controls as these, the user can employ highly-advanced mixing techniques. And of course, with an equivalent input noise level of −113dBm (IHF-A), the sound quality is good enough for studio recording. Each channel even has an overload indicator.



SPECIFICATIONS

Input level: −50dBm to +4dBm • Input impedance: 1.5kΩ to 160kΩ • Output level Rated: +4dBm • Maximum: +21dBm (9V RMS) • Output load impedance: Over 10kΩ • Effect send level: −20dBm • Effect send load impedance: Over 10kΩ • Effect return level: −20dBm • Effect return impedance: 47kΩ • Equivalent input noise: −113dBm (IHF-A) • Frequency response: 20Hz to 40kHz ±3dB (Gain control at minimum) @0dBm = 0.775V • Controls: Gain × 8, Treble × 8, Bass × 8, Effect volume × 8, Panpot × 8, Channel volume × 8 • Main controls: Master volume × 2 (right × 1, left × 1), Effect volume × 1, Phones volume × 1, Power switch × 1 • Jacks: Input × 8, Effect send × 1, Effect return × 1, Output × 2 (right × 1, left × 1), Phones × 1 • Indicators: Overload × 8, level × 2 (right × 1, left × 1), Power × 1 • Dimensions: 325(W)×76(H)×236(D) mm (12.8″×3″×9.3″) • Weight: 2.2 kg (4.85 lbs.)

6-CHANNEL STEREO MIXER

BX-600 6-Channel Stereo Mixer

The BX-600 features a compact design, yet is a sophisticated stereo mixer with 6 input channels and 2 output channels. A Gain control is also provided for each channel to let the user connect virtually any instrument or device. A variable gain range that's as wide as a much larger mixer—up to 24dBm for line inputs—makes the BX-600 ideal as a monitor mixer or a submixer. Specially designed to satisfy the needs of both professional and hobby use, the BX-600 is an outstanding value for the money.

Compact, Multi-Function, High-Performance 6-Channel Mixer

The BX-600 is a highly sophisticated 6-channel mixer that incorporates controls for channel gain, effect send/return, effect volume, pan pot and other mixer functions. A complete set of return jacks turns the BX-600 into an 8-channel mixer for even greater mixing flexibility. LED indicators provide at-a-glance indications of the optimum mixing levels. The BX-600 even shuts out hum from power sources for superior sound quality.

SPECIFICATIONS

Input sensitivity: −51dBm • Input impedance: 1.5kΩ to 200kΩ • Output level: Rated +4dBm, Maximum +21dBm (9V RMS) • Output load impedance Over 10kΩ • Effect send level: Rated +4dBm, Maximum +21dBm • Effect send load impedance: over 10kΩ • Effect return sensitivity: −30dBm • Effect return impedance: 47kΩ to 300kΩ • Equivalent input noise: −113dBm (IHF-A) • Frequency response: 10Hz to 35kHz (Gain control at minimum) • Crosstalk: Between channels Over 75dB, Between right and left Over 55dB • Controls: Gain × 6, Effect volume × 6, Panpot × 6, Channel volume × 6 • Main controls: Return volumes (right×1, left×1), Master volumes (right×1, left×1), Power switch×1, Input×6, Effect send×1, Effect return×2 (right, left), Output×2 (right, left) • Indicators: Peak×2 (right, left), Power×1 • Dimensions: 280(W)×60(H)×155(D) mm (11″×2.4″×6.1″) • Weight: 1.2 kg (2.64 lbs.)

BX-400 *4-Channel Mixer*

Reasonably-priced 4-channel mixer with the emphasis on sound quality.

Even though it has a compact—half the size of a magazine—and light-weight design, the BX-400 4-Channel Mixer incorporates a useful 3-step input gain selector that allows it to be used with a wide range of sound sources. In addition to its diverse applications such as vocals and instruments, the BX-400 has a simple control panel that allows virtually anyone to use the unit easily. An at-a-glance peak indicator simplifies the setting of optimum mixing levels that won't produce either distortion or noise. The BX-400 also eliminates hum from the power source, thus ensuring superior sound quality.

SPECIFICATIONS

Input level/Impedance: MIC/ – 50dBm/1.8kΩ, INST/ – 35dBm/15kΩ, LINE/ – 20dBm/68kΩ • Output level: Rated/ + 4dBm, Maximum/ + 21dBm (9V RMS) • Output load impedance: Over 10kΩ • Equivalent input noise: – 115dBm (at MIC) IHF-A • Frequency response: 10Hz to 42kHz (at LINE) • Crosstalk: Over 80dB (between channels) • Controls: Input level select switch × 4, Channel volume × 4, Master volume × 1, Power switch × 1 • Jacks: Input × 4, Output × 1 • Indicators: Peak × 1, Power × 1 • Dimensions: 190(W)×55(H)×135(D) mm (7.5″ ×2.2″ ×5.3″) • Weight: 800 g (1.76 lbs.)

KM-04 *4-Channel Micro Mixer*

Palm-Sized 4-Channel Micro Mixer.

The ultra-compact design of the KM-04 allows it to be placed anywhere, while its battery-powered operation allows it to be used anywhere. And yet despite its compact dimensions, the KM-04 incorporates four input channels and one output channel. In addition, the KM-04 comes with a peak indicator that helps ensure optimum settings for crisp, clear sound.

SPECIFICATIONS

Power: 9V Battery • Current draw: DC9V 1mA • Input sensitivity: 190mV (RMS) • Output level: 2.1V (RMS) • Input impedance: Over 22kΩ • Output load impedance: Over 10kΩ • Dimensions: 145(W)×47(H)×86(D) mm (5.7″ ×1.9″ × 3.4″) • Weight: 350 g (0.77 lbs.)

KM-2 *Mixing Amplifier*

- *The KM-2 is a compact two-channel mixer which operates on battery power.*
- *The convenient portable design allows the KM-2 to be used for a wide variety of applications and is especially effective for producing sounds from two guitars from a single amplifier.*
- *Maintains a high level of sound quality.*

SPECIFICATIONS

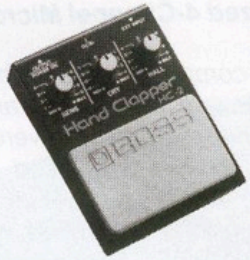
Power: 9V Battery • Current draw: DC 9V, 0.7mA • Gain: 20dB • SN ratio: 80dB • Dimensions: 100(W)×55(H)×68(D) mm (3.9″ ×2.2″ ×2.7″) • Weight: 260 g (0.6 lbs.)

HAND CLAPPER / PERCUSSION SYNTHESIZER

HC-2 *Hand Clapper*

For a wide array of clapping effects.

- *The HC-2 produces the sound of hand clapping when the pad is tapped.*
- *Equipped with a Hall control that allows adjustment of the reverberation level and a Dry control that adjusts the clapping tone, the HC-2 can create a wide range of hand-clapping effects.*
- *The HC-2 can be connected to other devices, such as a drum machine or a synthesizer, in order to synchronize the clapping with sounds from other instruments.*



SPECIFICATIONS

Power: 9V Battery, AC Adaptor (PSA Adaptor) • Current draw: DC 9V, 11mA • Input level: Over 150mV • Output load impedance: Over 10kΩ • Dimensions: 94(W)×64(H)×136(D) mm (3.7″×2.5″×5.4″) • Weight: 460 g (1.01 lbs.)

PC-2 *Percussion Synthesizer*

All types of percussion sounds, from synthesizer drums to castanets

- *The mini-size PC-2 creates a wide variety of percussion sounds from synthesizer drums and castanets to metallic and wood-tapping sounds.*
- *Built-in attack-generating circuit allows production of realistic drum sounds, from strong to delicate tones.*
- *The perfect sound effect machine for recording sessions, giving extra variation possibilities to drummers.*

SPECIFICATIONS

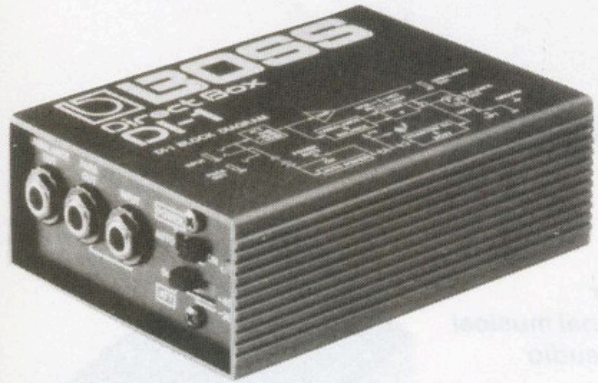
Power: 9V Battery, AC Adaptor (PSA Adaptor) • Current draw: DC 9V, 9mA • VCO range: 85Hz to 3kHz • LFO range: 2Hz to 400Hz • Decay time: 30ms to 5 sec. • Output level: 0.5Vp-p (at 1kHz) • Output load impedance: 10kΩ • Residual noise: – 80dBm or less (IHF-A) • Dimensions: 94(W)×64(H)×136(D) mm (3.7″×2.5″×5.4″) • Weight: 470 g (1.03 lbs.)

DIRECT BOX

DI-1 *Direct Box*

Lets you interface virtually any electronic instrument to PA and recording lines while maintaining perfect sound quality.

- *The DI-1 converts instrument outputs (unbalanced phone jacks) into line level (balanced XLR connectors) for mixer inputs.*
- *Active circuitry ensures a wider frequency response and better SN ratio, while the 3-stage input level attenuator lets the DI-1 match your instrument precisely.*
- *The balanced output is equipped with a Phase Polarity switch and a Ground switch to cut the ground line between the input and output, while an unbalanced output lets you use the DI-1 as a buffer.*
- *Built for professional use, the DI-1 is attractively priced to let amateur musicians apply professional techniques to their music-making.*



SPECIFICATIONS

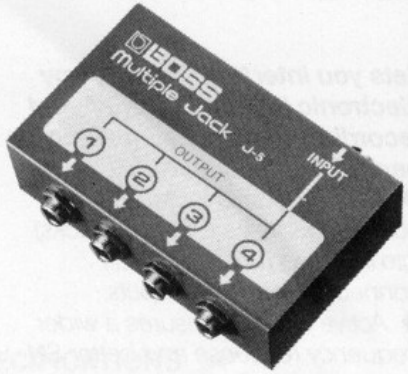
Power: 9V Battery, Phantom Power (24V to 48V DC) • Input Level: – 20dBm, • Input Impedance: 4.7MΩ/37kΩ/33kΩ • Maximum Input Level: + 45dBm at 1kHz • Output Load Impedance: Over 200Ω at balanced output, Over 10kΩ at unbalanced output • Output Level at – 20dBm input: – 18dBm into 600Ω load at balanced output, – 20dBm into 50kΩ load at unbalanced output • Frequency Response: 20Hz to 40kHz ($^{+0.5}_{-1}$ dB) • Residual Noise: – 110dBm or less (IHF-A) • Auto Power Function: Automatically cuts the power after the input level is below – 50dBm during 15 minutes • Input Jack: Unbalanced • Output Jacks: Parallel, Unbalanced, Balanced • Switches: Power (Auto/On), Attenuator (0dB/ – 20dB/ – 40dB), Phase (Nor/Inv), Ground (Nor/Lift) • Dimensions 96.5(W) × 46(H) × 125(D)mm ($3^{13}/_{16}$″ × $1^{13}/_{16}$″ × $4^{15}/_{16}$″) • Weight: 480 g (1 lb 1 oz)

MULTIPLE JACK

J-5 *Multiple Jack*

A multiple jack for increasing the number of possible sound variations.

- *The J-5 Multiple Jack allows the user to connect a single input to a maximum of four outputs.*
- *The J-5 is also effective for developing exciting sound techniques, including letting a single guitar simultaneously produce both a normal sound and a sound effect, thus creating a loop incorporating several effect pedals.*



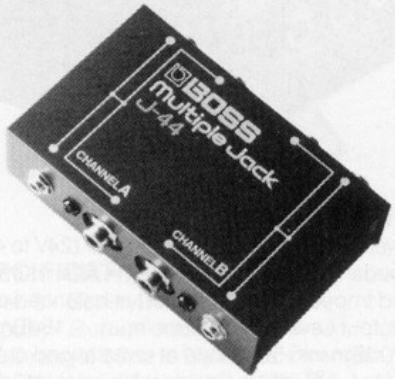
SPECIFICATIONS

Dimensions: 100(W)×38(H)×74(D) mm (3.9″×1.5″×2.9″) • Weight: 210 g (0.46 lbs.)

J-44 *Multiple Jack*

A handy accessory for connecting professional musical instruments to home audio equipment.

- *The J-44 Multiple Jack allows the user to connect a musical instrument that is equipped with either mini phone jack or RCA (pin) jack.*
- *The J-44 significantly simplifies on-line recording on a cassette deck of performances by a guitar or keyboard.*
- *The J-44 can be used with stereo equipment in a wide array of applications.*



SPECIFICATIONS

Jacks: Phone jack × 4, RCA jack × 2, Mini-phone jack × 2 • Dimensions: 100(W)×38(H)×74(D) mm (3.9″×1.5″×2.9″) • Weight: 230 g (0.5 lbs.)

BOSS IS MORE EXCITING ON STAGE

Boss Pocket Dictionary Vol. 2

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BOSS POCKET DICTIONARY

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Vol. 2